Organic food consumption:
Application of the Means-end theory

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ABSTRACT

This study is designed to examine the phenomenon of organic food consumption. The overarching goal is to help researchers and marketing practitioners understand how the phenomenon is generated, how organic shoppers experience organic food consumption, and to find significant elements in organic food consumption. Thus, this study examined the phenomenon in two manners. First, a qualitative study was explored to enrich our understanding about the meaning of organic foods and how organic foods are used to achieve organic shoppers' goals and values. In-depth interviews with fifteen organic shoppers were analyzed by laddering/HVM. The result shows that a means-end hierarchy structure was applicable to organic food consumption. Second, an empirical study tested and validated the Means-End Theory by employing both objective, others-oriented and subjective, self-oriented perspectives. Utilizing an online survey method, a total of 512 completed responses were used for the data analyses. The analysis of structural equation modeling (SEM) supported all the hypotheses testing the relationships among the four constructs (i.e., attributes, consequences, values, and behavioral outcomes) except for the moderating roles of preventive health care behavior and socially responsible behavior. The research model can motivate future researchers to further investigate factors involved in organic food consumption and assist organic food producers and retailers with practical information as they strive to better target and promote their products.

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CHAPTER I
INTRODUCTION

For the past two decades, there has been increasing interest in organic products including organic foods (USDA, 2014). Organic foods constitute the fastest growing sector of the American food marketplace (Organic Trade Association, 2014). Researchers have found that Americans' food practices and choices have shifted from hedonic-based tastes (e.g., instant foods) to functional- and rational-based preferences driven by health, safety, and environmental motives (OTA 2010 Tracking Study). According to OTA (2014), organic foods are valued not only as natural health products, but also as environmentally friendly ones.

The growth of the organic market is highly associated with the growth of the green/sustainable market because organic food is produced by using "the conservation of soil and water to enhance environmental quality for future generations" (USDA National Organic Program). The United States Department of Agriculture (USDA) defines organic food as grown "without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation" (USDA, 2014). A government-approved certification process sets criteria and rules for organic foods, and certifiers inspect farms where organic foods are produced (OTA, 2014). These production methods yield better or higher quality products than non-organic production methods and thus may satisfy organic shoppers in particular (Magistris & Gracia, 2008; Palupi et al. , 2011; Pique et al., 2013; Smed et al., 2013).

Organic shoppers have beliefs and values different from those of non-organic shoppers (Akai et al., 2012; Dean et al., 2012; Deleuran, 2011; Hughner et al., 2007; Maya et al., 2011; Ngobo, 2011). A recent study of 2011 US Families' Organic Attitudes & Beliefs (OTA, 2010 Tracking Study) found that parents who bought organic products prioritized health values. They also expressed the belief that organic products are healthier for themselves and for their children. The personal health values motivating organic food consumers include food safety concerns about pesticides, hormones, and antibiotics and the desire to avoid highly processed and artificial ingredients. In contrast, non-organic shoppers are described as apathetic in terms of values or skeptical in terms of belief: 23% of participants do not believe that organics are healthier; another 23% say they do not know much about organics; and 19% mention they do not care about organics.

Although the most organic agricultural lands are Oceania (33%), Europe (29%) and Latin America (18%), consumer demand for organic products is concentrated in North America and Europe (The World of Organic Agriculture 2013). In 2011, the countries with the largest organic markets were the United States (46%), Germany (15%), and France (8%) (The World of Organic Agriculture 2013). Despite its growth, research on the U.S. organic consumer market is surprisingly limited. While food scientists have analyzed the nutrition-related health effects of organic foods and qualitative difference between organic and non-organic products or cultivations (Amodio et al., 2007; Dangour, et al., 2010), very little of the existing research on organic foods has been conducted in the context of retailing and marketing, and very few of these studies have been theory-

based. Although organic products have been studied in relationship to consumers' decisions about whether or not to purchase organic products, these studies have mostly relied on qualitative methods that produce information only on the particular cases studied (Deleuran, 2010; Gronhoj, 2006; Gronhoj & Olander, 2007). Furthermore, much of the existing research has focused on typologies of organic consumers (Autio et al., 2009; Chinnici et al., 2002; Didier & Lucie 2008; Gil et al., 2000), particularly among European consumers (e.g., Finish, Sicilian, French, and Spanish). Thus, a theoretical understanding of the U.S. organic shoppers' beliefs and values is needed.

This study uses a mixed-methods approach that combines qualitative and quantitative research techniques in order to gain a richer range of insights than is possible from the use of just one method. A qualitative research design can expose underlying psychological processes and social problems that consumers face while consuming organic food products. Before generating theory about a phenomenon, qualitative research design predominantly calls for rigorously gathering and analyzing of data to avoid drawing conclusions from *a priori* assumptions (Creswell, 2003; Glaser & Strauss, 1967). Thus, some proponents of qualitative research recommend foregoing a preliminary literature review in order to allow concepts to originate and emerge from the data (Glaser, 1998). In contrast, a quantitative research design enables the researcher to apply existing theory to help explain a phenomenon. This study explains organic shoppers' consumption value of organic food based on means-end theory. Means-end theory explicates value-formation process from consumers' perception of the attributes of products or services (means) to their desired end-states (values) (Gutman, 1982). Values direct consumers'

behaviors in all aspects of their lives that are linked in consumption decision-making. Consumers' buying behaviors derive from the relationships consumers perceive between the product's attributes and consumers' desired goals and values (Costa et al., 2004; Gutman, 1982). In the next section, consumer value will be explained in detail.

CONSUMER VALUE

How researchers define value conceptualizations and meanings varies depending on context of study. For example, in consumer behavior research, values are generally classified using four categories: culture, trade-off, experience, and process. Cultural values comprise the similarities and differences among various cultures; many cross-cultural studies are focused on the choice behavior. The second category, trade-off values, is defined in terms of price and quality; trade-off values have been characterized as a tug of war between "give" and "get" (Zeithaml, 1988). The third category, experiential values, may be evoked through shopping experiences and includes both utilitarian (e.g., task-related, goal oriented) and hedonic values (e.g., enjoyment, fun) (Babin et al., 1994). Holbrook and Corfman (1985) point out that an experiential value is "an interactive relativistic preference experience… characterizing a subject's experience of interacting with some object. The object may be anything or event" (p. 40). The category of experiential values includes a wider range of more subtle and abstract values than the category of trade-off values, which center narrowly on price and quality.

The last category, value as a process, has an integrative meaning that encompasses the other three value categories. This kind of value works as psychological

construct, that is, “a centrally held, enduring belief which guides actions and judgments across specific situations and beyond immediate goals to more ultimate end-states of existence” (Rokeach 1968, p. 161). In this sense, consumer behavior is related to maintaining and achieving values located within individuals’ belief systems (Verplanken & Holland 2002; Honkanen et al., 2006). In this study, value as a process is defined as a personal perception (i.e., perceived value), constructed from knowledge, which specifies the perceived importance of product attributes. This process extends consumer value research into the means-end hierarchy (Gutmans, 1982; Howard, 1977; Olson & Reynolds, 1983; Tolman, 1932).

MEANS-END THEORY

Means-end theory is an appropriate framework for analyzing the process by which consumer choices are driven toward desired end-states/goals. Means-end theory characterizes the attributes of products or services as the means and desired values as the ends toward which consumers are striving (Gutman, 1982). Means-end theory is a knowledge structure that links consumers’ product knowledge to meaning structures (i.e. how consumers cognitively associate products with themselves). The knowledge structure can be described as a chain that starts with product knowledge (attributes), which becomes linked with the perceived consequences or benefits produced by the product/service (consequences) and, through a sequence of logical connections, eventually fulfills personal values. (Reynolds & Olson, 2001). The lower levels of a means-end hierarchy contain consumers’ self-knowledge about the product under

consideration and their perceived linkages between that product and the functional consequences of product use. At the abstract level, these consequences are connected to the consumer's life goals and values. Thus, means-end theory represents a self-relevant and personalized view of consumer decision making (Gutmans, 1982, 1997; Reynolds & Olson, 2001; Walker & Olson, 1991). Because of this, the means-end theory has sometimes been characterized as modeling a subjective perspective. However, a review of the literature suggests that the value hierarchy incorporates both subjective and objective perspectives. This will be discussed in the following section.

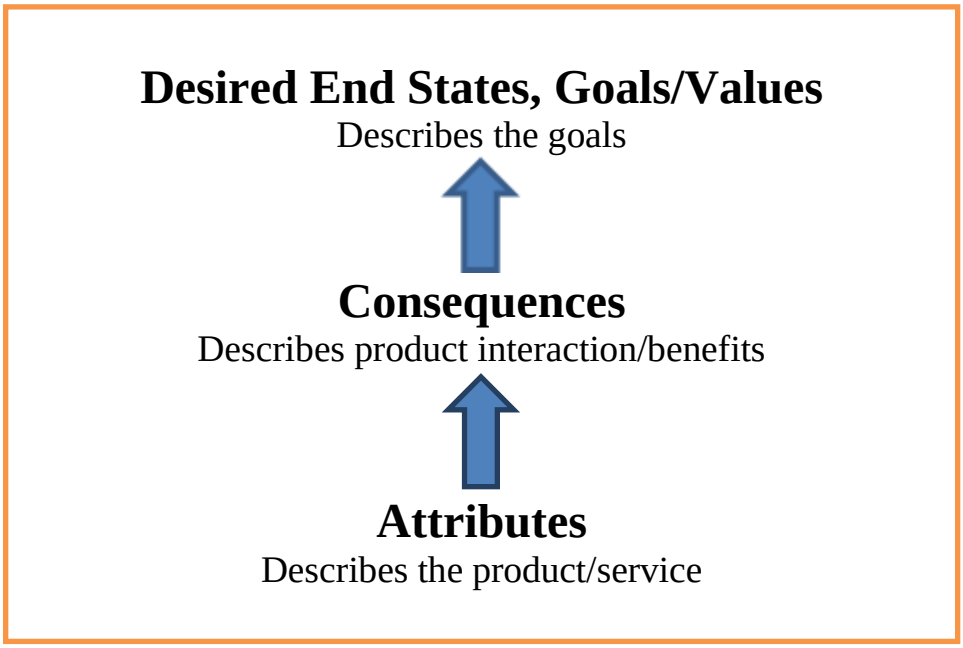

Figure 1. A Value [means-end] Hierarchy
(Reynolds & Olson, 2001; Woodruff & Gardial, 1996, p. 65)

SUBJECTIVE vs. OBJECTIVE KNOWLEDGE

Knowledge can be established both objectively and subjectively. Lebacqz (1967) explains: when the word "objective" is used in the context of knowledge, it means that the possessors of knowledge "exactly express, as it is in itself, the reality or the aspect of reality they pretend to describe, or narrate, or know" (p. 191). In contrast, "subjective" means that "this reality or aspect of reality is not apprehended as it is in itself, but is changed or deformed in the very act of apprehension or description, because, it may be, we project into the reality in question some feelings, thoughts or relationship which exist only in our own minds" (p. 191). Both can be classified as modes of knowledge and neither can be prioritized as more important than the other (Lebacqz, 1967). Subjective knowledge reflects an individual's attitudes toward his/her beliefs and intentions (Davidson, 2001). Subjective knowledge appears "as objects of sense or of thought to an individual at each instant of this waking life, and there are things that are real whether or not they appear as perceptual or conceptual objectives." This is the theme of "epistemology" (Montague, 1940, p. 15). Epistemology relates to subjectivity and subjectivity can be extended to self-oriented values (e.g., egoistic values) (Stern & Dietz, 1994).

In contrast, objective knowledge relates to "axiology" or "agathology" which is the philosophical study of value that questions the nature of value and its relation to other moral categories (Standford Encyclopedia of Philosophy 2012). It is commonly acknowledged that moral values are more likely to be associated with the welfare of others (which tends to be socially desirable) than the welfare of oneself (Barnett, 2000;

Eisenberg, 1982). Thus, objectivity can be extended to others-oriented values (e.g., altruistic values) (Aldred, 1994).

Therefore, in this study, subjective perception signifies self-oriented values, and objective perception signifies the others-oriented values. Under these circumstances, the objective approach (i.e., others-oriented values) plays just as important a role as the subjective approach. According to Raju, Lonial, and Mangold (1995), depending on the types of knowledge (i.e., subjective vs. objective), perceived decision outcomes will vary. Correspondingly, if we extrapolate these concepts to the means-end chain theory, consumers' attributes, consequences, and end-states/goals also will vary, depending on consumers' subjective and objective knowledge.

In the past, research on the means-end theory has primarily emphasized a subjective view of product knowledge, with an emphasis on personal value (Brunso et al., 2004; Gutman, 1982; Grunert & Grunert, 1995; Hofstede et al., 1998). Although both subjective and objective processes [aspects] of knowledge are integral components of value formation, objective meanings are neither directly stated nor implied in the means-end chain. In this study, a new approach is adopted, one which integrates others-oriented objective knowledge within the means-end theory, thereby making a significant theoretical contribution.

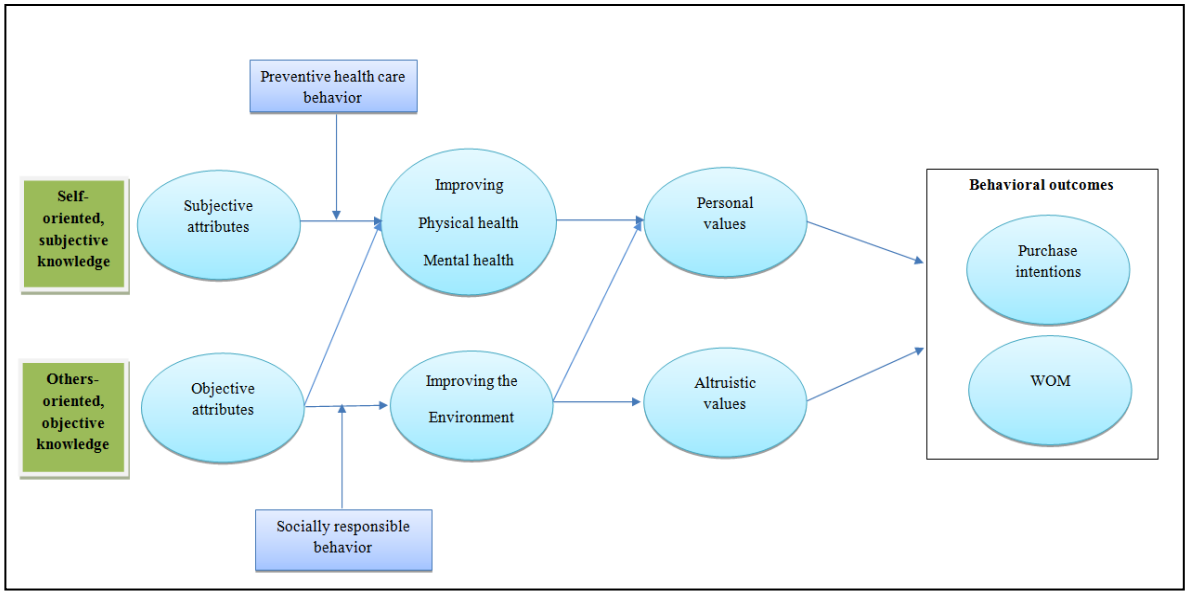

Figure 2. Conceptual Framework

SIGNIFICANCE OF THE STUDY

The U.S. organic product market has been experiencing significant changes due to increased demand for organic products. However, existing frameworks for research on organic food consumption have not fully accounted for these changes in organic shoppers' consumption behaviors. To address this deficit, the current study applies the mean-end theory, which incorporates many issues surrounding consumer value research (Florence & Grunert, 2007; Grunert & Bech-Larsen, 2005; Pieters et al., 1995). To comprehend and predict organic shoppers' consumption behaviors, marketers need to understand the characteristics of organic shoppers; what value perceptions are associated with organic food shopping, and how these perceptions influence their word-of-mouth (WOM) and purchase intentions. To do so, this study identifies (1) attributes of organic

food products (2) consequences of organic food consumption, and (3) the end-state/goal (desired value) of organic food consumption. Within the hierarchical framework of attributes, consequences, and values, this research model articulates two perspectives: self-oriented (subjective knowledge) and others-oriented (objective knowledge). In addition, a moderating effect on the relationship between attributes and consequences within both subjective and objective perspectives is added to the model—namely preventive health care behavior. Additionally, a moderating effect on the relationship between attributes and consequences within the objective perspective is added, namely socially responsible behavior. This study examines relationships among the three constructs (i.e., attributes, consequences, and values) and their effects on behavioral outcomes of WOM and purchase intentions for organic food products (see Figure 2). Examining this process will shed new lights on ways to manage better organic product market by: (1) Identifying which choice criteria are salient to the relevant consumers (i.e., organic shoppers) and (2) assessing why those factors are important to organic shoppers.

In the course of examining attributes, consequences, values, WOM, and purchase intentions in the context of organic food consumption, specific theoretical contributions can be generated. First, this study identifies key attributes of organic foods that distinguish it from conventional foods. Some of these attributes are based on self-oriented (subjective knowledge) (e.g., taste and safety) and others on others-oriented (objective knowledge) (e.g., fair trade practices and information about production). Although these attributes are significant components for distinguishing organic foods from conventional

foods, very few studies have focused on the importance of these attributes in the choice of organic foods.

Second, this study contributes to the existing literature on the relationships between consequences (e.g., improving health and the environment) and values (e.g., egoism and altruism). Although these relationships have been explored in the context of psychological science (Diener & Diener, 1996), ecological economics (Ojea & Loureiro, 2007), and sociology (Buttel, 1987), relatively little consumer research has investigated these relationships in organic food consumption.

Third, this study provides empirical support for the means-end hierarchical model by examining two perspectives (subjective and objective knowledge) in this model. Means-end theory has been validated in qualitative studies (Gutman, 1982; Reynolds & Whitlark, 1995; Reynolds & Gutman, 1988); however, there have been few quantitative studies confirming its validity. Although several researchers have used quantitative methods to identify means-end hierarchies, past studies have been applied in different contexts such as recycling and general food shopping (Bagozzie & Dabholkar, 1994; Scholderer et al., 2002). Furthermore, a quantitative approach of a means-end hierarchy has not been investigated for organic food shopping using a specific segment, organic shoppers. This study measures the relationship among three constructs (i.e., attributes, consequences, and values) identified through the qualitative study and tests the relationships between these variables and outcome variables using quantitative methods.

Lastly, understanding the hierarchical map of organic shoppers' consumption may help marketers and managers develop processes for improving the U.S. organic product

market. Analyzing how organic shoppers buy food categories will also help marketers to better administer the non-food organic product market. Specifically, WOM is examined as an outcome, which marketers may find to be an effective tool for recruiting new consumers.

PURPOSE OF THE STUDY

The purpose of this study is to examine the hierarchical process involved in consuming organic food by applying the means-end theory. This study employs a mixed-method approach: (1) A qualitative method is used to discover the phenomena of consuming organic foods; using in-depth interviews and field observations, the "meanings" of experiencing organic foods are analyzed. (2) A quantitative approach is used to access the hierarchical structure of the organic food attributes, desired consequences and values; this quantitative method validates the proposed research constructs and their relationships based on the means-end theory. Toward the end, these three constructs are used to predict behavioral outcomes (i.e., purchase intentions, WOM). This way, this study will provide organic product marketers suggestions for capturing the emerging organic shopper group.

RESEARCH QUESTIONS

Initial Research Questions (qualitative)

- What is the nature of an organic food purchase?
- What do organic foods mean to organic shoppers?

- How do organic shoppers use organic foods to achieve their goals?

Final Research Questions (quantitative)

- Is a means-end hierarchy structure (i.e., attributes, consequences, and values) applicable to organic food consumption?
- Does perceived importance of subjective and objective attributes leads to perceived benefits of consuming organic foods?
- Do the perceived benefits from consuming organic foods lead to achieving desired values?

DISSERTATION ORGANIZATION

This dissertation consists of five chapters. Chapter I serves to introduce the concept of consumer values and Means-end theory. The chapter also provides a brief overview of the research, significance of the study, purpose of the study, and research questions. Chapter II provides an overview of the U.S. organic food market and organic agriculture. The chapter also lays out theories and conceptual frameworks based on a review of literature. Previous studies of the Means-end theory used in qualitative and quantitative studies of foods are reviewed. The chapter also addresses the research hypotheses. Chapter III discusses both qualitative and quantitative methods used. Qualitative study presents sampling, procedure, data analysis, and results. Quantitative study discusses sampling, procedure, sample demographics, and survey description. The chapter also provides instrument development including measurement development and

content validity test. Chapter IV provides the data analyses and results of the hypotheses testing. The chapter covers descriptive analyses of the sample data, preliminary analysis, construct validity and reliability using confirmatory factor analysis (CFA), and hypothesis testing using Structural Equation Modeling (SEM). Chapter V presents conclusions, implications of the study, limitations, and recommendation for future research.

Table 1. Definitions of the Concepts and Constructs

Constructs	Definitions	Sources
Altruistic (self-transcendence) values	Concerns for the harmful consequences of environmental damage to all living organisms; also cares for the effects on people, future generations, and even oneself.	Schultz & Zelezny (2003)
Certified organic	The item has been grown according to strict uniform standards that are verified by independent state or private organizations.	OTA (2014)
Eco-labeling	A practice of providing information to consumers about a product which is characterized by improved environmental performance and efficiency compared with similar products.	Basu et al. (2003)
Environmentalism	The concern for the reciprocal impacts of humans and nature on each other.	Menon & Menon (1997)
Health	A complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity.	World Health Organization (1984)
Organic agriculture	An ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity.	National Organic Standards Board (1995)
Sustainable consumption	The use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations.	International Institute on Sustainable Development (1994)
Word-of-mouth (WOM)	The oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial, concerning a brand, a product or a service.	Arndt (1967)

CHAPTER II
LITERATURE REVIEW

This chapter is composed of two parts. The first section provides some background on the U.S. organic product market and the importance of the current research. The next section provides a comprehensive review of previous research in order to establish the theoretical foundation for the proposed study and its application of means-end theory within the context of organic food consumption. Detailed descriptions of attributes, consequences, values, and behavioral outcomes are provided along with the research hypotheses.

THE U.S. ORGANIC PRODUCT MARKET

According to the Organic Trade Association (OTA), organic food is the largest segment of the organic products market: in 2013, it accounted for $32.3 billion out of the total organic product sales of $35.1 billion. This was an 11.5% increase over 2012 sales and the fastest growth rate in five years (OTA 2014). According to the OTA, organic food categories include dairy, bread and grains, beverages, fruits and vegetables, snack foods, packaged foods, sauces, and meat (see Table 2). Fruits and vegetable sales have always been most profitable for the U.S. organic food market. In 2013, fruits and vegetables were 46% of the total organic food value, more than 10% of all U.S. fruit and vegetable sales (OTA 2014).

Table 2. Organic Categories

Organic Food Categories ($32.3 billion)	Organic Non-food Categories ($2.8 billion)
Dairy	Supplements
Bread & Grains	Personal Care
Beverages	Household Products/Cleaners
Fruits & Vegetables	Pet Food
Snack Foods	Flowers
Packaged	Fiber Linens & Clothing
Sauces	
Meat, poultry, & fish	

Source: OTA's Manufacturer Survey

According to the OTA's 2013 survey, more than three-quarters (78%) of U.S. families purchased organic products in 2012, which was more than ever before. Christine Bushway, OTA's Executive Director and CEO, stated, "This has moved way beyond a niche market." Not surprisingly, organic food sales accounted for almost 92% of total organic product sales in 2013 (dairy, $4.9 billion; bread & grains, $3.8 billion; beverages, $4 billion; fruits & vegetables, $15 billion, snack foods, $1.7 billion; packaged, $4.8 billion; sauces, $662 million; meat, poultry, & fish, $675 million) (OTA 2014 Annual Report). From 2000 to 2010, organic food sales have grown by 338%, while sales of conventional food have grown at only about 35% (see Figure 3). Although organic food costs 10% to 40 % more than non-organic food, consumer demand and sales are growing (OTA, 2014). Many studies provide evidence that consumers are willing to pay a premium for organic products (Krystallis et al., 2006; Magistris & Gracia, 2008; Thompson & Kidwell, 1998). According to OTA'S *U.S. Families' Organic Attitudes & Beliefs 2014 Tracking Study*, price has become much less of a barrier to purchase organic

products than in the previous year. It is not surprising that consumers' demand for organic products and accessibility to organic products have increased lately.

U.S. Organic Food vs. Total Food Sales, Growth and Penetration, 2000-2010

Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Organic Food	6,100	7,360	8,635	10,381	12,002	14,223	17,221	20,410	23,607	24,803	26,708
Growth	21.0%	20.7%	17.3%	20.2%	15.6%	18.5%	21.1%	18.5%	15.7%	5.1%	7.7%
Total Food	498,380	521,830	530,612	535,406	544,141	566,791	598,136	628,219	659,012	669,556	673,324
Growth	5.0%	4.7%	1.7%	0.9%	1.6%	4.2%	5.5%	5.0%	4.9%	1.6%	0.6%
Organic as % Total	**1.2%**	**1.4%**	**1.6%**	**1.9%**	**2.2%**	**2.5%**	**2.9%**	**3.2%**	**3.6%**	**3.7%**	**4.0%**

Source: Organic Trade Association's 2011 Organic Industry Survey conducted 12/22/2010 – 3/7/2011 ($ mil consumer sales).

Figure 3. Sales of Organic Food vs. Total Food

ORGANIC AGRICULTURE AND LABELS

Ever since advanced agricultural techniques began to facilitate mass food production, consumers and farmers alike have had to deal with negative impacts such as threats to food safety and environmental damage. Since the 1990s, organic farming has arisen as an alternative to standard technologically-enhanced mass production and has been growing faster than any other sector in the U.S. (Beaudreault, 2009). In 1990, the U.S. Congress adopted the Organic Foods Production Act (OFPA) as part of the 1990 Farm Bill. This action inaugurated over a decade of public input and discussion, which resulted in a National Organic Program final rule published by the U.S. Department of Agriculture (USDA) in December 2000 and implemented in October 2002. In 2002, guidelines for certified organic labels were established to help consumers ascertain the exact organic content of the food they buy (Certified Organic Label Guide, 2014;

National Organic Program, 2014). The “USDA Organic” seal certifies that the product so labeled contains only organically-produced ingredients (e.g., at least 95% organic ingredients). In addition, products that contain at least 70% organic ingredients may label those ingredients on the ingredient listing (see Figure. 4).

Although organic agriculture has existed since the Agricultural Age, the modernization of organic agriculture has occurred only in the past ten years in the U.S since the USDA started establishing organic labels and regulations in the early 2000s. Thus, many consumers still are not able to discern exactly what organic products are and what organic labels mean. Consumers often misunderstand that organic labels constitute a health claim (Bougherara & Combris, 2009). Although certified-organic labels imply an environmentally friendly production process, “organic” does not equate with “healthy” in a medical sense. Some researchers have claimed, for example, that organic kiwi is healthier than conventional kiwi because it contains more health-promoting factors (i.e., polyphenols, antioxidant, ascorbic acid [vitamin C], and minerals) (Amodio et al., 2007). However, one such study does not guarantee that all organic foods contain health-promoting factors.

Other consumers often misunderstand that organic labels are eco-labels, guaranteeing that the products so labeled are green, i.e. not harmful to the environment. As global warming and climate change have become prominent social issues, using eco-labels has become one of the ways that consumers try to contribute to sustainable consumption. The EU Ecolabel was established by the European Commission in 1992 to promote “businesses to market products and services that are kinder to the environment”

(European Commission, 2014). The EU Ecolable certifies an extensive range of product categories (e.g., cleaning products, textile and home products, and services). The official criteria for defining eco-labels vary across product categories (European Commission, 2014). In general, sustainable products meet the following criteria: "must satisfy a genuine human need, should not harm the environment or health, and should have the green life cycle" (Bedek, 2011, p.35). Thus, the criteria for labeling a product as green relate to the entire life cycle of a product from its design to its disposal. Although organic foods are often considered as one kind of green product because their production methods tend to be less harmful to the environment than conventional production methods (USDA 2014), they are not by definition eco-label products. In food production, no green/sustainable product-label officially exists (European Commission, 2014).

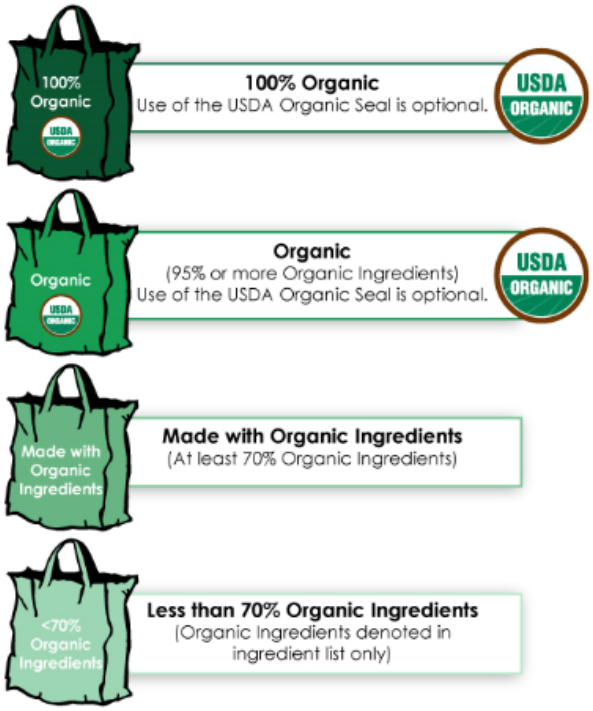

Figure 4. Certified Organic Label Guide 2014

MEANS-END THEORY

DEVELOPMENT OF MEANS-END THEORY

Consumers evaluate and comprehend products based on both given information and inferred beliefs (Graeff, 1997). Depending on consumers' level of involvement in their purchases, they may be motivated to seek information about certain products (Celsi & Olson, 1988). That is, consumers' perceptions of personal relevance for a product can stimulate purchasing the product (Mulvey et al., 1994). Numerous researchers have pointed out that consumers' perceptions of personal relevance for products are based on consumers' knowledge- (belief-) structures, which can be explained by means-end chains (Boer & McCarthy, 2003; Gutman, 1982; Reynolds & Gutman, 1988). Because the cognitive structure of means-end chains links consumers' knowledge about product attributes and benefits with their goals and values, means-end knowledge structures can illuminate why a particular product is personally relevant to a consumer (Olson & Reynolds, 1983).

Means-End Theory (MET), which explains individuals' motivations to achieve their end goals, parallels Rosenberg's (1956) Expectancy-Value Theory (EVT), which explains individuals' attitudes toward objects and actions (Fishbein & Ajzen, 1975). Both theories are concerned with individuals' beliefs and values. EVT has been expanded into the Theory of Reasoned Action (TRA) which is a model for the prediction of behavioral intention and has been widely used in various contexts of consumer research, especially in empirical studies (Fishbein & Ajzen, 1975). However, MET has been predominantly

adopted in qualitative studies because its means-end chain entails a useful set of methods for interviewing consumers.

The means-end chain approach was developed by Kelly (1955), who initiated a way to study the psychology of personal constructs by classifying hierarchically ordered categories of psychological factors influencing an individual's action. Kelly's psychotherapeutic interviewing method is used to derive and analyze character traits. In MET, this interviewing method is known as laddering (Grunert & Grunert, 1995; Reynolds & Gutman, 1988). Laddering is an in-depth, one-on-one interviewing technique used to gain an understanding of how consumers perceive the attributes of products/services to achieve higher order values in their life (Gutman, 1982). The laddering technique is also called as a hierarchical value map approach because it indicates the interrelation of the attributes, consequences, and values for a given product or service (Devlin, et al., 2003; Klenosky et al., 1993).

According to Gutman (1991), the means-end chain "presumes a number of attributes, consequences and values that are asymmetrically linked by the respondent whereby lower level elements lead to or imply higher level elements" (p. 144). The means-end chain's main assumption is that consumers are interested in products that provide self-relevant consequences and ultimately help them enact their life values (Gutman, 1982). Consumers use products or services as means to achieve certain goals or end-states (Reynolds & Olson, 2001). The idea of the means-end chain was inspired by Rokeach's (1968, 1973) categorization of values into two types: terminal values and instrumental values. Terminal values are end-states such as happiness and security.

Instrumental values are modes of behavior such as honesty and broad-mindedness, which are effective in achieving end-states. Gutman (1982) integrated Rokeach's concept of terminal values into his own explanation for how preferred end-states (terminal values) are translated into consumers' choices of products. Thus, Rokeach's terminal values provided the initial concept of Gutman's means-end chain.

Looking specifically at consumers, Howard (1977) developed a value structure in semantic categories by relating values to product attributes and brand decisions. He argued that the use of a consumer product (e.g. a breakfast beverage) is pertinent to consumers' choice of brands because consumers use them in everyday life and are familiar with the brands. Although his semantic structure had three simple categories, Howard's attempt inspired Gutman (1982) to develop the means-end theory in the context of foods. Finally, Gutman (1982) posited the means-end chain theory in consumer research to understand consumers' cognitive structures in consumption behavior. The central tenets of these structures are attributes, consequences, and values. Product/service attributes are at the lowest level of the hierarchy. Consequences are at the second level of the hierarchy, where they are linked to goals or end-states, which constitute the highest level of hierarchy. In the following section, the three constructs—attributes, consequences, and values—will be explained.

Attributes

The majority of researchers consider attributes in a continuum from concrete to abstract (Olson & Reynolds, 1983; Reynolds & Gutman, 1988; Rokeach, 1973; Walker &

Olson, 1991). Concrete attributes are tangible characteristics of products such as flavor and price. On the other hand, abstract attributes are multidimensional, such as the country of production and the brand name. This distinction between concrete and abstract attributes is closely related to Grunert's (2005) distinction between objective and subjective qualities of a product. An objective quality specifies "the physical characteristics built into the product and is typically dealt with by engineers and food technologists" (Grunert, 2005, p. 371). In contrast, a subjective quality is "the quality as perceive by consumers" (Grunert, 2005, p. 371). Thus, in the current study, subjective attributes will be defined as those that consumers can perceive directly and which therefore can be described and appreciated in different ways by each consumer (e.g., texture, taste, quality for price, perceived safety, and health diet). In contrast, objective attributes will be defined as those that indicate facts and aspects of reality that are not subject to consumers' individual subjective perception, for example, information provided on the product's packaging (e.g., certified organic label, no pesticides and modified ingredients used, country of production, information about production, fair-trade practices, and package recycled materials). Within the category of objective attributes, there are two different types: intrinsic and extrinsic quality attributes. Intrinsic quality attributes are the concrete physical traits of a product, that is, the nature of the product itself (Boer & McCarthy, 2003; Zeithaml, 1988). This category would include, for example, the actual facts that a food contains no pesticides or herbicides, no additives or residues from fertilizers, no genetically modified ingredients, and the certified organic label. These attributes, thus, concern the actual ingredients of organic foods, as certified

by the official organic label, which ensures that the product contains at least 95% organic ingredients, as defined by the USDA. Conversely, extrinsic quality attributes are defined as “the characteristics that are related to the product, but not physically part of it” (Jover et al., 2004, p. 455). Relevant extrinsic qualities might include the country of production, information about the production method, fair trade practices, and the packaging of a product in recycled materials. Attributes shape consumption experiences; however, consumers’ perceptions of these experiences are not synonymous with attributes. Instead, these experiences constitute consequences (Grunert, 2005). The consequences are directed to the benefits of having these attributes. Consumer behavior is goal-oriented (Bagozzi & Dabholkar, 2000; Harre, 1998). Consumers prefer certain attributes “because of their ability to deliver desired consequences or to avoid undesirable ones” (Woodruff & Gardial, 1996, p. 69). Thus, it can be expected that certain attributes will be perceived as promoting certain consequences.

Consequences

Consequences are the outcomes of what customers experience with product attributes and can also be referred to as benefits that are provided by using products or services. Botschen, Thelen, and Pieters (1999) note that attributes “do not explain per se for what reasons the product or service is or might be bought” (p. 41). The main assumption underlying the means-end chain is that consumers do not buy products for the products’ sake, but for the benefits that their consumption can provide.

According to Olson and Reynolds (1983), there are two types of consequences relevant to consumers' purchases: functional and psychosocial. Functional consequences are direct and tangible outcomes of attributes. Psychosocial consequences are intangible and indirect outcomes of attributes, which are at a higher abstraction level than functional consequences. In the context of organic food, functional consequences are benefits such as improvements in consumers' physical health or protection of the natural environment, whereas psychosocial consequences would include positive influences on consumers' mental health. Both kinds of consequences are linked to values.

Values

Rokeach (1973) defined a value as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (p.5). Two kinds of terminal values exist: personal (self-oriented) and social (society-oriented). In the current study, the concept of these two terminal values has been employed as personal and altruistic values, which indicate desired values. Woodruff (1977) defined a desired value as "a customer's perceived preference for an evaluation of those attributes, attribute performances, and consequences arising from use that facilitate achieving the customer's goals and purpose in use situations" (P. 142). This desired value that stems from the consumers' evaluation of organic food attributes and their benefits. Consumers' actual goals for organic food consumption can be assumed to be directed toward achieving personal values and altruistic values (Magistris & Gracia, 2008; Michaelidou & Hassan, 2008). Personal

values provide an internal guide to what is good, beneficial, important, and useful (Rokeach, 1973). In contrast, altruistic values are regarded as concerns for the harmful consequences to others, such as environmental damage to all living organisms as well as concerns about the effects on people, future generations, and even oneself as the member of a larger group (Schultz & Zelezny, 2003). Thus, these two values may be centrally located within the organic shoppers' belief system.

REVIEW OF PREVIOUS RESEARCH

Since Gutman (1982) first applied means-end in the context of food consumption, the means-end chain has been widely used in analyzing consumer food choices (e.g., Fotopoulus et al., 2003; Grunert & Grunert, 1995; Grunert & Valli, 2001; Jaeger & MacFie, 2001; Miles & Frewer, 2001; Reynolds & Olson, 2001). To identify key constructs explored in previous MET research on foods, a literature search in different scientific databases was employed. Three key words—"means-end," "values", and "food"—were entered in EBSCO, (Business Source Complete) and Google Scholar search engine. After excluding studies that were not relevant to the topic of this study, a total of 76 studies on MET of foods published in 1992-2014 were obtained. Most of these studies were qualitative studies using laddering/MEC; little research has applied the means-end theory to quantitative studies. Of the 76 studies, a total of 17 studies were quantitative studies that explored the concept of MET in foods. A few selected previous qualitative studies on foods are reviewed in detail below. After this review of qualitative

cases (Table 3), 17 quantitative studies on foods are reviewed in the following section (Table 4).

Review of Previous Qualitative Studies

The topic of organic foods has garnered the attention of academics only since the 1990s, and scholarly interest in consumers' reception of organic foods emerged only in the late 1990s and early 2000s. Qualitative studies predominated in these early years, because these researchers, as pioneers in the investigation of organic foods, saw the qualitative methodology's inquiry-based process of understanding as appropriate for the initial stages of exploration in this new research field. Thus, the qualitative studies reviewed below—mostly small case studies that compare various consumer segments' behaviors and values with regard to particular food types—stem mostly from the early 2000s.

Building on these qualitative studies, researchers have attempted to develop quantitative studies (i.e. deductive, theory-testing studies) on organic foods. The current study pursues the same goal of advancing organic food research by testing and enhancing theoretical constructs.

Table 3. Major Findings of MET on Foods (Qualitative Studies)

Sources	Context/ Design	Participants	Analysis	Major findings
Zagata (2014), International Journal of Consumer Studies	Organic foods/laddering interview	32 Organic food consumers in Czech Republic	MEC/Laddering (Hierarchical value map)	This study identified the motives of organic food consumption. It found that Czech consumers considered organics as food 'without chemicals' that is favorable to health. The product-based qualities of organic food were important criteria among these consumers. Also, great importance was attached to an environmentally friendly approach, which results in the reduction of negative impacts and creates an opportunity to balance the relationship between society and nature.
Barrena & Sánchez (2012), Applied Economics	Rice, wine, and functional food	70 individuals in Spain	MEC/Laddering (Hierarchical value map)	The study examined the consumer choice structure in relation to three types of products. For rice, consumers were attracted by its nutritional value and felt part of a social group due to traditional food images. For wine, brand and quality labels played a key role—consumers associated them with quality of life and safety. For the functional food (credence good), the attribute of 'health benefit effect' and consequences of 'healthy food' and 'nutritional value' were connected, which eventually created 'enhancing my quality of life and safety' as their terminal value.
Boecker et al. (2008), Food Quality and Preference	GM yogurt/laddering interview	60 German mothers	MEC/Laddering (Hierarchical value map)	The study distinguished three segments (non-buyers, maybe-buyers, and likely-buyers) and compared these groups with respect to purchase intentions for GM yogurt. Eventually, these groups were separated as two groups: accepters and rejecters of GM food. For both segments, risk perception was the dominating association with the attribute "genetically modified." They appreciated reduced risk through the GM element not being present in the food item. In the end-states (values), rejecters were highly associated with ethics and responsibility, whereas accepters were related to self-determination.
Baker et al. (2004), European Journal of Marketing	Organic food/laddering interview	32 regular consumers of organic produce in both UK and German consumers	MEC/Laddering (Hierarchical value map)	The study compared UK and German consumers' personal values influencing organic food choice. Both groups respected values concerned with health, well-being, and the enjoyment of life; however, the product attributes they sought to reach these values were different (UK—healthiness and not genetically modified; Germany—taste and quality). Also, in the UK group no significant connection was made between organic food and the environment.

Table 3. ***(Continued)***

Sources	Context/ Design	Participants	Analysis	Major findings
Boer & McCarthy (2003), Production, Demand & Public policy	Irish convenience food (prepared food)/laddering interview	20 Irish consumers	MEC/Laddering (Hierarchical value map)	The study examined two segments: adventurous consumers and hedonistic consumers. Both segments believed the positive benefits of prepared foods in terms of saving time, convenience, and flexibility. However, in terms of family's health, wellbeing, and security, the hedonistic consumers were concerned about the family's weight control while the adventurous consumers were concerned about the quality of ingredients in prepared foods.
Devlin et al. (2003), British Food Journal	Food retailers/ interview	15 respondents	MEC/Laddering (Hierarchical value map)	The study identified the linkages between food retail store attributes and personal values. When consumers perceived retail store images, "good quality products," "good reputation," "store has additional services," and "value for money" were most important attributes. These attributes were linked to the consequences of "feel good" and "save time." Finally, consumers were driven by the most personal values, happiness and quality of life.

Review of Previous Qualitative Studies

As Table 4 shows, most quantitative studies appeared after 2000 except Newman and Taylor's (1992) study of children's eating snacks in the experimental study and the study of Hofsted et al. (1998) employing the association pattern technique (APT). Hofstede et al. (1998) attempted to describe APT as a quantitative technique for measuring the means-end chains and provided evidence on the validity of APT. APT investigates the links between attributes and consequences and the links between consequence and values separately because attributes and values are not linked. This study posits that attributes, consequences, and values should be measured separately (as APT requires) because these three concepts are conditionally independent. To validate

the APT approach, four different foods (yogurt, beef, olive oil, and vegetable oil) were tested using loglinear models. The findings indicated that the APT and laddering networks produce different outcomes; APT yielded higher frequencies of occurrence of concepts than laddering. Thus, this study suggested using APT in large-scale quantitative studies. However, APT has been rarely used in later studies. This study is the first one that applies a quantitative methodology to test the MET.

Grunert et al. (2000) also attempted to develop a theory within the MET framework. Their research incorporated five studies: three quantitative studies and two qualitative studies. Study 1 examined consumers' evaluation of information on organic products and their store choice for organic food products in Germany and Denmark. Study 2 indicated how the various product attributes and their interactions increased or decreased buying intentions for yogurt and juice. Study 3 showed how consumers mentally associate various characteristics of the product with quality dimensions and purchase motives. Study 4 focused on consumer perceptions of four cheese product concepts involving genetic modification and a conventional product concept. Building on these four studies, Study 5 finally tested consumer attitudes to genetic modification in food production and buying intentions with regard to genetically modified food products in four European countries. Many European consumers had negative attitudes towards the use of genetic modification in food production, and these attitudes led them to distrust dairy products involving genetic modification. Their negative attitudes also inhibited their perception of benefits of the technology and prevented the formation of purchase intentions with regard to such products. Although this study explored empirical studies in

the context of foods, the studies were conducted on data from the1990s, which are outdated. As can be seen from Table 4, most of these studies were on data collected in late the 90s and early 2000s. Also, many of the studies focused on European consumers. Importantly, there has been no research applying the MET structure to organic foods in an empirical context.

Table 4. Major Findings of MET on Foods (Quantitative Studies)

Sources	Context/ Design	Participants	Analysis	Major findings
Rahman, Stumpf, & Reynolds (2014), Sustainability and Marketing	Wine/Experimental design (survey)	224 participants from school (108 respondents in the treatment condition and 116 in the control condition)	Regression	This experimental study used sensory evaluation in conjunction with a survey of wine consumers' purchase decisions; whether a wine was organic was influenced. The study found taste alone to be a strong predictor of wine preferences, not only in the case of organic wines but also for conventional wines as well.
Krystallis, Vassallo, & Chryssohoidis (2012), Journal of Marketing Management	Organic foods	8171 in 8 EU countries	CFA, Cluster, ANOVA	The study examined consumers' motives towards organic foods using Portrait Value Questionnaire (PVQ). This study validated PVQ in the organic food context and clustered organic shoppers by regular buyers, occasional buyers, and non-buyers. Regular-and occasional buyers hold collectivist values more strongly, whereas non-buyers hold both collectivistic and individualistic values less strongly.
Bitzios et al. (2011), Food Policy	Bread/dual-mode (laddering interview & survey)	404 UK households	HVM/ Laddering, LCM, Regression	The study examined how the inclusion of a functional ingredient affects consumer attitudes towards bread. Consumers selected bread based upon the bread type and preferred intrinsic qualities (the type of flour used) that were associated with health benefits. They were willing to pay for bread contains functional ingredients that indicate health benefit.

Table 4. ***(Continued)***

Sources	Context/ Design	Participants	Analysis	Major findings
Lusk & Briggeman (2009), American Jpurnal of Agricultural Economics	Organic bread/survey	176 in 2007	Cluster, econometric	The study determined consumers' food value systems by utilizing recent advances in best-worst scaling. Results showed that on average the values of safety, nutrition, taste, and price were the most important to consumers while the values of fairness, tradition, and origin were the least important. The study suggested that food values are significantly associated with consumers' stated and revealed preferences for organic food.
Ferran & Grunert (2007), Food Quality and Preference	Fair trade coffee/interview	54 French	HVM/ Laddering, Cluster, canonical analysis	The study examined why French consumers buy fair trade coffee and whether there is difference between the retail stores chosen (supermarket vs. specialized store). Consumers 'motives and values include a desire for equality, a desire for hedonism, and a wish to protect oneself and the environment. Supermarket purchasers was more focused on human rights while specialized store purchasers were more focused on protecting the environment and participating in alternative economy.
Costa et al. (2007), Food Quality and Preference	Meals /interview	50 Dutch citizens in Gelderland in 2001	HVM/ Laddering, ANOVA	This study investigated the motives behind the choice of meal solutions (homemade meals, ready meals, take-out, eating out, frozen pizza, and chilled hotpot). Depending on how consumers perceived the trade-off between sensory and health-related benefits, ready meals were replaced by homemade meals. In the meal solutions' choice, moral issues (saving time and energy) and ready meals were closely associated.
Page et al. (2005), Appetite	Cooking meat/interview, survey	Study 1: 58 middle-aged women Study 2: 247 middle-aged women	HVM/ Laddering, Regression	The study assessed the predictive validity of MEC and found that MEC was better at predicting attitudes towards behavior than at predicting behavior itself. Constructs from the TPB explained only a moderate amount of the variance in self-reported behavior.

Table 4. ***(Continued)***

Sources	Context/ Design	Participants	Analysis	Major findings
Brunso et al. (2004), Journal of Business Research	Food-related lifestyle/survey	1000 consumers in France in 1998	Structural Equation Modeling (SEM)	The researcher reconstructed MET and lifestyle within a dual-process framework using the list of values and the food-related lifestyle instrument. The study incorporated a bottom-up (a hierarchical categorization process) and a top-down (goal-directed action) information-processing route.
Jover et al. (2004), Food Quality and Preference	Red wine/survey	161 from 2000 to 2001	EFA, CFA, ANOVA	The study developed a measurement scale for the perception of wine quality and validated seven dimensions using a 21-item scale. This study suggested using two different scales for food and beverage products: intrinsic and extrinsic attributes.
Scholderer, Brunso, & Grunert (2002), Advances in Consumer Research	Food shopping, cooking/ interview	1000 UK consumers in 1998	SEM	The aim of the study was to cross-validate Brunso et al's. (2004) model and to gain evidence for its generalizability across different consumer populations. Using survey data gathered in the UK in 1998, the study established five different subsets of intervening knowledge structures that were strict mediators of the relationship between goals and behaviors. The results of Brunso et al (2004) were exactly replicated.
Jaeger & MacFie (2001), Food Quality and Preference	Apple/laddering interview	169 UK regular consumers of apples	HVM / Laddering, ANOVA	The study investigated the effect of advertising format and found that consumers reacted negatively to a photo of the apple when it was predominantly red in appearance. Among consumers high in need for cognition (NFC), product appearance acted as a message argument and exerted a strong influence on expectations. However, among low NFC consumers, expectations were not affected strongly by pictorial information.

Table 4. ***(Continued)***

Sources	Context/ Design	Participants	Analysis	Major findings
Miles & Frewer (2001), Food Quality and Preference	Laddering interview (Study 1)& Survey (Study 2)	Study 1: 86 female & 45 male in 1997 Study 2: 235 UK in 1998	HVM/ Laddering, ANOVA	The study investigated five specific food hazards (BSE, genetic modification, high fat diets, pesticide residues, and Salmonella food poisoning) related to decline in public trust in food-risk regulators. The findings showed that health concern was common to the five food hazards, but BSE, genetic modification, and pesticides regarding animal welfare and the environment were important as well.
Grunert et al. (2000), International Dairy Journal	Yogurt, beer, juice, and cheese	Study 1: German (n=225) and Demark (n=201) Study 2: Denmark (n=513), Finland (n=513), and USA (n=507) Study 3: Germany, Demark, Italy, and the UK, n=50 per country Study 4: total n=285 Denmark, Finland, Norway, Sweden Study 5: total n=2031 Denmark, Germany, Italy, and the UK	Study1: Logistic regression Study 2: Conjoint Study 3: Qualitative Study4: Qualitative (laddering) Study 5: SEM	Taking the results together, the major finding was that information about the product is a more important criterion than the physiological properties of the product itself in dairy products. Consumers considered health and the product methods to be important factors of quality dimensions while sensory impressions were not considered to be quality dimensions. Consumers preferred to translate product ingredients into benefits (health claims) and credible information about quality dimension. These results provided evidence that consumers are interested in health and they expect benefits from foods.

Table 4. ***(Continued)***

Sources	Context/ Design	Participants	Analysis	Major findings
Valette-Florence et al. (2000), Journal of Euromarketing	Fish/interview	85 women in the Copenhagen area & 96 in the Montpellier area	Nonlinear Canonical, cluster (discriminant)	The study examined the means-end orientations motivating or de-motivating consumers to buy seafood products in France and Denmark. Fish was valued by both Danish and French consumers because it creates variety. In Denmark, fish was already perceived as a healthy as well as tasty product, and lack of convenience and price as barriers. Also, taste was more important in Denmark than France.
Acebron & Dopico (2000), Food Quality and Preference	Beef/mixed-method (interview &survey)	159 households from La Coruna	Regression	Consumers decided the quality of beef on the basis of intrinsic (color, freshness, and visible fat) and extrinsic (price, promotion, and designation of origin) quality cues. Also, experienced quality was determined by expected quality and quality attributes (taste and tenderness)
Hofstede et al. (1998), International Journal of Research in Marketing	Yogurt (n=100), beef (n=100), olive oil (n=50), and vegetable oil (n=50)/interview	300 Belgium	HVM/ Laddering, loglinear models	This study investigated the association pattern technique (APT) as a supplement to laddering. APT separately measures the attribute-consequence, and the consequence-value links. Using four products (yogurt, beef, olive oil, and vegetable oil), loglinear models were applied. The results indicate that the content of the APT and laddering networks differs.
Newman & Taylor (1992), Journal of Experimental Child Psychology	Snacks/ experimental design	86 elementary school children in New York	ANOVA	The study examined whether a means-end relationship between two snacks exerts a negative influence on preference for the means snack in the contingency. The experimental treatment had a significant effect only on the post-treatment evaluation of the first snack eaten and not of the second snack. The study concluded that it is targeted at change in reaction to the means activity when a reward procedure is instituted.

RESEARCH HYPOTHESES

Based on the literature review, specific research hypotheses on the relationships among attributes, consequences, values, and ultimately the behavioral outcomes (i.e., purchase intentions and WOM) are constructed.

ATTRIBUTES

Subjective Attributes and Health Benefits

Subjective qualities of organic foods include taste, color, smell, freshness, quality for price, health diet, and perceived safety. Matt et al. (2011) defined a subjective quality as a sensory quality, which includes features of a product such as color, size, smell, taste, and cleanliness and is an important criterion in consumers' selection process while shopping for food (Matt et al., 2011). For example, Acebron and Dopico (2000) demonstrate that quality cues such as color, freshness, and price are significantly associated with determining optimum levels of beef quality. These quality cues or subjective qualities of organic foods are associated by consumers with health, which is why consumers attend to them.

A growing body of evidence suggests that organic fruits and vegetables can be higher in vitamins, minerals, and antioxidants. Furthermore, many studies provide evidence that organically grown foods are healthier than those grown in the conventional ways (Grunert, 2005; OTA 2014; Rijswijk & Frewer, 2008). For example, Amodio et al. (2007) compared organically grown kiwi to conventionally grown kiwi and found that organically grown kiwi contains more health-promoting factors (i.e., higher levels of

polyphenols, antioxidant activity, ascorbic acid--vitamin C, and minerals) than those grown under conventional conditions. They also compared peel and flesh color: organic kiwi was darker and had thicker flesh. (Because organic kiwifruits fight pests in the absence of pesticides, a thicker skin may deter insects.) A similarity between organically grown and conventionally grown kiwifruits was flavor (i.e., levels of sugars and acids). Palupi et al. (2012) also compared the nutritional quality of organic versus conventional dairy products by integrating three years' studies using a meta-analysis approach. The results showed that organic dairy products contain significantly higher protein and omega-3 (e.g., ALA, cis-9, trans-11 conjugated linoleic acid, trans-11 vaccenic acid, eicosapentanoic acid, and docosapentanoic acid) than those of conventional types. Accordingly, the nutritional quality of organic vs. conventional wheat (Langenkamper et al., 2006) and organic vs. conventional fruits, vegetables, and grains (Worthington, 2001) were compared. Organic wheat was found to have higher amounts of protein and fibers than conventional wheat. Organic fruits, vegetables, and grains had higher vitamin C, iron, magnesium, phosphorus, and fewer nitrates than conventional crops. Such findings suggest that organically grown foods provide better quality and nutrition than conventionally grown foods.

Moreover, consumers are aware that organic foods may promote not only physical health, but also mental health. Previous studies found that consumers' organic food purchases are associated with feelings of good conscience and feelings of responsibility for well-being (Baker et al., 2004; Makatouni, 2002). Mental health is described as a level of psychological well-being including an individual's ability to enjoy life and a

balance between life activities and efforts to achieve (Berkman, 1971; Diener & Diener, 1996; Taylor & Brown, 1988). Previous studies have found that consumers who regularly buy organic foods have psychological advantages such as pleasure and safety (Hughner et al., 2007; Michaelidou & Hassan 2008). While gaining physical health benefits from organic foods, consumers are relaxed and less stressed out from issues of food safety and quality. According to the World Health Organization (1984), health can be defined as "a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity." In other words, psychological health should be considered along with health promotion and illness prevention as part of well-being. As discussed before, the means-end chain studies have shown that the attribute leads to the consequence (Baker et al., 2004; Bitzios et al., 2011; Boecker et al., 2008; Grunert & Bech-Lasen, 2005). Based on the discussion, the following hypothesis is proposed:

> H1: The perceived importance of subjective attributes of organic foods will lead to perceived benefits of improving (a) physical health and (b) mental health.

Objective Attributes and Health and Environmental Benefits

Objective attributes of organic foods such as the absence of additives or residues from fertilizers and information about production are related both to consumers' health and to sustainable agriculture. When potentially harmful farm chemicals no longer percolate into the water supply, related developmental and health problems in communities can recede. According to Grunert (2000) et al., such information about the product is a more important criterion affecting consumers than the physiological

properties of the product itself. This does not mean that the physiological properties (sensory properties) are not important in food choice. However, consumers primarily considered information about the product (e.g., organic production methods, product ingredients) and how these functional ingredients can be translated into health claims (Grunert et al., 2000). From the perspective of consumers, such quality dimensions are generally not amenable to sensory impression.

Although some authors point that the nutrition values between organic and conventional foods are the same (Block, 2012; Hamerschlag, 2014), what makes organic foods different from conventional foods is that they are free of contaminant contents such as pesticides, additives, and residues from fertilizers, which is highly related to safety issues. Many studies provide evidence that these contaminants eventually cause problems in human health (Hoefkens et al., 2010; Miles & Frewer, 2001; Skwarlo-Sonta et al., 2011; Trijp & Lans, 2007; Williams & Hammitt, 2001). This is one of the main reasons that consumers want to eat organic foods—so that they can avoid the stress of knowing that they might be injecting contaminants (Canavari et al., 2002; Cerjak et al., 2010; Finch, 2008). Thus, organic shoppers may expect that objective attributes of organic foods improve their health physically and mentally. These objective attributes of organic foods are related to the production processes of sustainable agriculture.

Freedom from contaminants and environmental friendliness results from the implementation of organic farming system to “maintain and replenish soil fertility without the use of toxic and persistent pesticides and fertilizers” (OTA, 2014). Organic production prohibits the use of synthetic chemicals in crop production and the use of

antibiotics and hormones in livestock production (Beaudreault, 2009). Many studies provide evidence that organic agriculture production benefits the environment. For example, a nine-year study by USDA Agricultural Research Service (ARS) (2007) reported that organic farming can build up soil organic matter better than conventional no-till farming can. Similarly, Kramer and Block (2008) studied the use of organic versus chemical fertilizers and found that fertilizing apple trees with synthetic chemicals produced more adverse environmental effects than organic manure. Another study from The Rodale Institute in 2010 showed that organic productions can remove about 7,000 pounds of carbon dioxide from the air and sequester it in an acre of farmland per year. Rodale estimates that if all 434 million acres of U.S. cropland were converted to organic production systems, it would be the equivalent of eliminating 217 million cars—nearly 88 percent of all cars in the country today and more than a third of all the automobiles in the world. For this reason, numerous researchers have pointed out the benefits of organic farming for environment, and thus many consumers buy organic foods to achieve beneficial outcomes (Annunziata, 2011; Fotopoulos & Krystallis, 2002; Hughner et al., 2007; Honkanen et al., 2006; Magistris & Gracia, 2008; Menon & Menon, 1997; Michaelidou & Hassan 2008). Thus, the following hypothesis is proposed:

> H2: The perceived importance of objective attributes of organic foods will lead to the perceived benefits of improving (a) physical health, (b) mental health and (c) the environment.

CONSEQUENCES

Health Benefits and Values

In the consumption of organic foods, one of the key functional consequences or benefits is improving physical health. However, this does not mean organic foods instantly changes consumers' health conditions. Organic shoppers' organic food consumption is more likely related to prevention than to immediate health changes. For example, food scares including BSE (mad cow disease) and salmonella poisoning have accelerated concerns about production methods for conventional foods (Hughner et al., 2007). As consumers become more aware of the long-term negative effects of eating conventional foods, they turn to organic foods. This is because they perceive organic farming methods as more trustworthy than conventional farming methods (Lacy 1992; USDA, 2014).

Williams and Hammitt (2001) compared the perception of health risks for organically grown produce and conventionally grown produce. They found that 90% of respondents associated lower pesticide-related mortality risks with organically grown food instead of with conventional food. According to Medical News Today (2007), organic fruits and vegetables contain up to 40% more antioxidants than non-organics because they are grown without chemical fertilizers and pesticides. Dhar and Foltz (2005) also found health benefits of organic milk versus non-organic milk, noting that hormones in non-organic milk may cause breast and colon cancer. Consumers expect organic products to be free of petrochemical compounds, pesticides and toxins. Thus, one of the

reasons for rising organic food consumption is decreasing trust in the quality of conventional food (Williams & Hammitt 2001).

Organic shoppers are more likely to have health concerns than non-organic shoppers (Boer & McCarthy, 2003). The health benefits of organically grown food consumption and consumers' health concerns are highly associated with personal values (e.g., Baker et al., 2004; Devlin et al., 2003; Fotopoulos et al., 2003; Grunert & Grunert, 1995; Grunert & Bech, 2005; Manyiwa & Crawford, 2001). The majority of previous studies on organic foods have provided evidence that the personal values sought by consumers of organic foods concerned with health, well-being, and the enjoyment of life. When consumers choose organic foods, their anxiety about becoming ill from conventional foods decreases, and thus they feel safer and more content. Therefore, improving both physical and mental health ultimately provides consumers a comfortable life and self-respect, which are referred to as personal values. Thus, the following hypotheses are proposed:

> H3: The perceived benefits of improving physical health from consuming organic foods will lead to positive personal values.
>
> H4: The perceived benefits of improving mental health from consuming organic foods will lead to positive personal values.

The Environment Benefits and Values

As discussed before, an organic farming system helps improve the environment, which consumers may associate with altruistic values such as a world at peace, conservation of natural resources, and respecting the earth. Until the 1970s, neither the

public nor the business community paid much overt attention to environmental issues (Menon & Menon, 1997). Consequently, environmentalism was often regarded as anti-business and anti-industrialization (Menon & Menon, 1997). However, as consumers have become more and more interested in social problems, environmental concerns, and sustainability, the business community has also paid these values more attention (Kempton et al., 1995). Thus, organic agriculture and production have become one of several important marketing concepts which are associated with the altruistic values of creating a sustainable and healthy environment for oneself and for others (OTA 2014).

According to O'Riordan (1976), environmentalism is sustained by two ideological themes: the 'ecocentric mode' and the 'technocentric mode'. The ecocentric mode is defined as "resting upon the supposition of a natural order in which all things moved according to natural law, in which the most delicate and perfect balance was maintained up to the point at which man entered with all is ignorance and presumption" (McConnell, 1965, p. 190). In contrast, the technocentric mode is "the application of rational and 'value-free' scientific and managerial techniques by a professional elite, who regarded the natural environment as 'neutral stuff' from which man could profitably shape his destiny" (Hays, 1987, p. 2). The two perspectives illuminate how environmentalism is conceptualized by the reciprocal impact of humans and nature (Menon & Menon, 1997). Thus, the benefits of improving the environment are not only for others, but also for oneself, even if these benefits are not instantly recognizable. Moreover, when consumers are involved in environmentally friendly activities such as recycling and bringing their own bags for shopping, consumers achieve pleasure, accomplishment, and happiness,

which count as personal values (Abeliotis, 2010; Michaelidou & Hassan, 2008). Organic foods are perceived as green products because their production methods are generally known to be less harmful to the environment than the conventional production method (USDA 2014). Thogersen (2011) found that most green consumers first purchased organic products for the sake of the environment. However, environmental concerns and green consumptions are not only attached to altruistic values, but also are highly associated with achieving personal values (Honkanen et al., 2006; Royne et al., 2011). Personal values are widely shared by people within a culture, and may be centrally located within a person's belief system (Honkanene et al., 2006). When consumers buy organic foods for the environmental benefits, they feel worth and rewarded by contributing positive input to society, which yields personal benefits. Thus, these ethical behavior are linked to personal values as well (Annunziata et al., 2011).

Zimmer et al. (1994) note that environmental concern is "a concept that can refer to feelings [consumer have] about many different green issues" (p. 64). Eco-friendly/green/sustainable behaviors and lifestyles are rooted in ethical values. These ethical values are highly associated with altruism, which represents the value of the well-being of others including wildlife (preservation value) and unborn humans (bequest value) (Aldred, 1994; Edwards, 1992; IUCN, 2013; Urien & Kilbourne, 2011). Edwards (1992) defines an altruist as a person "whose commitment to the well-being of others is independent of self-interest, indifference, compensation and substitution" (p. 121). Altruistic values are also referred to as self-transcendence values, which embrace individual concerns (Kilbourne et al., 2005). Thus, consumer practices toward improving

the environment ultimately generate altruistic values (Boulanger & Zaccai, 2007; Fotopoulos et al., 2003; Makatouni, 2002; Zanoli & Naspetti, 2002). These propositions lead to the next hypothesis:

> H5: The perceived benefits of improving the environment from consuming organic foods will lead to positive (a) personal values (b) altruistic values.

VALUES

Values and Behavioral Outcomes

According to Rokeach (1973), "culture, society, and personality are the major antecedents of values and that attitudes and behavior are their major consequents" (p. 326). Rokeach (1973) suggests that values are implicated either as dependent or independent variables: in anthropology and sociology, values are more likely to be considered as dependent variables; however, in psychology, values are considered independent variables. These values can thus be considered to guide our behavior.

The literature on the means-end theory justifies an increase in the level of abstraction from attributes to consequences and from consequences to goals/values. Goals in hierarchies designate a consumer's accomplishments, which are associated with product choices (Reynolds & Gutman, 1988). Consumer choice is regarded as a person's movement through a goal hierarchy, and the goal hierarchy's final goal can be a behavioral outcome (Bettman, 1979; Gutman, 1997). In this study, the behavioral outcomes are purchase intentions and WOM.

WOM is defined as the "oral, person to person communication between a receiver and a communicator whom the receiver perceives as non-commercial, concerning a brand, a product or a service" (Arndt 1967, p. 3). In a broad sense, WOM communication embraces “any information about a target object (e.g., company, brand) transferred from one individual to another either in person or via some communication medium” (Brown et al., 2005, p. 125). WOM naturally occurs among friends and family—i.e., salient people, important to an individual, who can influence his/her decision making processes (Brooks, 1957). In certain contexts regarding goods and services, interpersonal relationships among private parties can be a more powerful tool than mass media. Thus, marketers sometimes describe WOM as “a dominant force in the marketplace” (Mangold et al., 1999, p. 73).

Many researchers have claimed that high consumer satisfaction leads to positive WOM (Mittal et al., 1999; Richins, 1983; Swan & Oliver, 1989).When consumers purchase new products or services with no prior experience, WOM serves as a significant mechanism influencing behavior (Engel et al., 1969). Although marketers and researchers often emphasize the importance of WOM to recruit new customers (Arndt, 1967; Feick & Price, 1987; Richins & Root-Shaffer, 1988), WOM can be especially a strong factor among groups of consumers who have a homogeneous profile as purchasers of similar products. Organic shoppers often act as a group, which may explain why the majority of research in the organic market has focused on scrutinizing organic shoppers (e.g., Baker & Crosbie, 1993; Chinnici, D’Amico, & Pecorino, 2002; Dettmann, 2008; Hughner et al., 2007; Radman, 2005). Since organic shoppers possess similar socioeconomic background

and are motivated by similar values to buy organic products, many of them are likely to have family and friends who are also organic shoppers (Curl et al., 2013; Hughner et al., 2007; Lea & Worsley, 2005; Thompson & Kidwell, 1998). In addition, the majority of these shoppers (99%) tend to shop at specialty shops (Cicia et al., 2002), which means they have more chances to interact with other organic shoppers and thus are exposed to WOM.

It is expected that future behavioral intentions following product consumption can be an acceptable predictor of actual behavior (Devlin et al., 2003; Fotopoulos et al., 2003; Grunert & Grunert, 2005). Furthermore, the higher the level of goal attainment, the more positive will be the behavioral intentions that predict positive actions in the future (Gutman, 1997). The means-end theory assumes that values play a dominant role in guiding choice patterns (Hall & Lockshin, 2000). Whether these values are personal or altruistic in the goal hierarchy, goals provide the primary motivating and directing factor that influences actions (Gutman, 1997). Baker et al. (2004) state, "consumption activities related to the set of values a person possesses in that people purchase products to achieve value-related goals" (p. 997). Thus, values may eventually affect consumers' behavioral outcomes, purchase intentions and WOM. This leads to the next hypotheses:

H6: Personal values will lead to (a) purchase intentions and (b) positive WOM.

H7: Altruistic values will lead to (a) purchase intentions and (b) positive WOM.

MODERATORS BETWEEN ATTRIBUTES AND CONSEQUENCES

Preventive Health Care Behavior

Preventive health care refers to “behaviors that will prolong one’s healthy life or practices that otherwise lessen the effects of infectious disease, chronic illness, or debilitating ailments” (Jayanti & Burns, 1998, p. 6). Preventive health care such as eating nutritious foods and exercising regularly helps improve both physical and mental health. For organic shoppers, eating organic foods is one form of preventive health care. These health care behaviors are largely driven by the negative motive of preventing ill health, which brings about health consciousness (Jayanti & Burns, 1998).

Organic shoppers are more aware than others that food intake does affect their health; they appreciate healthy and natural foods and are more willing to choose healthier foods to improve their health than non-organic shoppers (Schifferstein & Oude Ophuis, 1998). Consumers who are health conscious and adopt a "wellness-oriented" lifestyle are much more prone to undertake preventive health care than those who are not health conscious (Jayanti & Burns 1998). Health consciousness refers to “the degree to which health concerns are integrated into a person's daily activities” (Jayanti & Burns, 1998, p. 8). Health-conscious consumers are aware of and concerned about their state of well-being and are motivated to improve and/or maintain their health and quality of life, as well as to prevent ill health by engaging in healthy behaviors and being self-conscious regarding health (Gould, 1988; Kraftand & Goodell, 1993; Plank & Gould, 1990; Newsom et al., 2005). Consumers who buy organic foods are health-conscious and they have positive attitudes toward benefits of health and are aware of nutrition (Kraft &

Goodell, 1993). Therefore, they carefully evaluate the attributes of organic foods because they believe that better quality of organic foods yields more health benefits (Cerjak et al., 2010; Chakrabarti & Baisya, 2007; Krystallis et al., 2006). Consumers' preventive health care behavior may accelerate the relationship between perceived importance of attributes of organic foods (i.e., subjective and objective attributes) and health benefits of organic foods (i.e., physical health and mental health). A number of researchers have found that consumers' most important motive for purchasing organic foods is to protect or improve their health (Padel & Foster, 2005; Magnusson et al., 2003; Zanoli & Naspetti. 2002). Thus, when organic shoppers are engaged in health issues, higher levels of preventive health care behavior will reinforce the relationships between attributes of organic foods and those consequences. Thus, the following hypothesis is proposed:

> H8: Consumers' preventive health care behaviors will moderate the relationship between the perceived importance of subjective and objective attributes of organic foods and improving physical health and mental health.
>
> With a higher level preventive health care behaviors, the perceived importance of subjective attributes of organic foods will have a stronger positive effect on improving (a) physical health and (b) mental health and the perceived importance of objective attributes of organic foods will have a stronger positive effect on improving (c) physical health and (d) mental health.

Socially responsible behavior

The definition of the socially responsible/conscious consumer has been described in different ways depending on the domain and context of the study. While Kinnear et al. (1974) identified ecologically concerned consumers in terms of personality and socioeconomic characteristics, Brooker (1976) used the broad term "socially conscious

consumer" and classified personality within Maslow's concept of self-actualization. According to Brooker (1976), socially conscious consumers are defined as "the group whose actions lead the way to an improving quality of life in society" (p. 107). Elkington and Hailes (1988) support this definition by describing the green consumer as one who avoids products and services that cause harms to the environment and to animals during production.

In the 1990's, researchers started to use the term "green consumers" as a new concept. Many researchers and marketers still use the term "green consumer" to refer to buyers of sustainable goods. However, the terms "environmentally friendly" and "green" have basically been used interchangeably, since neither has been defined in a distinctive way in the relevant literature. The main point of these different terms is to categorize consumers who are aware of the importance of environment and who take action to save the environment. Thus, socially responsible behaviors such as improving the state of the environment and reducing the use of artificial fertilizers in agriculture can be highly associated with environmental friendliness (objective attributes) and improving the environment through organic production. Thus, the following hypothesis is proposed:

> H9: Socially responsible behavior will moderate the relationship between the perceived importance of objective attributes of organic foods and improving the environment. With a higher level of socially responsible behavior, the perceived importance of objective attributes of organic foods will have a stronger positive effect on improving the environment.

SUMMARY

Chapter II described the growth of the U.S. organic product market and organic farming system including processing organic labels and regulations. After organic food was defined, the next section provided the conceptual foundations for this study and theoretical justification for the relationships assumed here among attributes, consequences, values, and behavioral outcomes in the consumption of organic foods. The conceptual model of this study was based on a literature review of the Means-end theory comprised of the three theoretical frameworks: attributes, consequences, and goals/values. Attributes lead to consequences and consequences are directed toward values as the final goals. As outcomes of these three constructs, behavioral outcomes (i.e., purchase intentions and WOM) were proposed.

CHAPTER III
METHODS

This chapter describes the methodological approaches that have been used to achieve the stated research objectives and explains specifically how each research question was investigated. The present research employed a concurrent mixed-method design, which facilitated the collection and analysis of both qualitative and quantitative data, a method well-suited to the investigation of how the means-end hierarchy applies to the consumption of organic foods. The chapter is divided into three sections. The first section presents the research model and hypotheses developed from Chapter II. The second section describes the qualitative research approach and research design including sampling, procedures, and data analysis followed by the results of the qualitative study. The third section describes the quantitative research design, including the sampling, procedure, sample demographics, and survey. The last section describes the instrument development including the construct measurement, content validity tests, and pre-test.

RESEARCH MODEL

This study tests a conceptual model depicting the relationship among attributes, consequences, values, and behavioral outcomes in the consumption of organic foods. As shown in Figure 6, the constructs are approached from two perspectives (a subjective, self-oriented perspective and an objective, others-oriented perspective). The suggested model illustrates the relationship among three tenets (i.e., attributes, consequences, and values) from both the subjective, self-oriented perspective and the objective, others-

oriented perspective; the direct relationship between values and behavioral outcomes, and the moderating effect of preventive health care behavior and socially responsible behavior on the relationship between attributes and consequences. The overall research model is shown in Figure 5 and 6.

HYPOTHESIZED RELATIONSHIPS

H1: The perceived importance of the subjective attributes of organic foods will lead to the perceived benefits of improving (a) physical health and (b) mental health.

H2: The perceived importance of objective attributes of organic foods will lead to the perceived benefits of improving (a) physical health, (b) mental health and (c) the environment.

H3: The perceived benefits of improving physical health from consuming organic foods will lead to positive personal values.

H4: The perceived benefits of improving mental health from consuming organic foods will lead to positive personal values.

H5: The perceived benefits of improving the environment from consuming organic foods will lead to positive (a) personal values and (b) altruistic values.

H6: Personal values will lead to (a) purchase intentions and (b) positive WOM.

H7: Altruistic values will lead to (a) purchase intentions and (b) positive WOM.

H8: Consumers' preventive health care behaviors will moderate the relationship between the perceived importance of subjective and objective attributes of organic foods and improving physical health and mental health.

With a higher level preventive health care behaviors, the perceived importance of subjective attributes of organic foods will have a stronger positive effect on improving (a) physical health and (b) mental health and the perceived importance of objective attributes of organic foods will have a stronger positive effect on improving (c) physical health and (d) mental health.

H9: Socially responsible behavior will moderate the relationship between the perceived importance of objective attributes of organic foods and improving the environment. With a higher level of socially responsible behavior, the perceived importance of objective attributes of organic foods will have a strong positive effect on improving the environment.

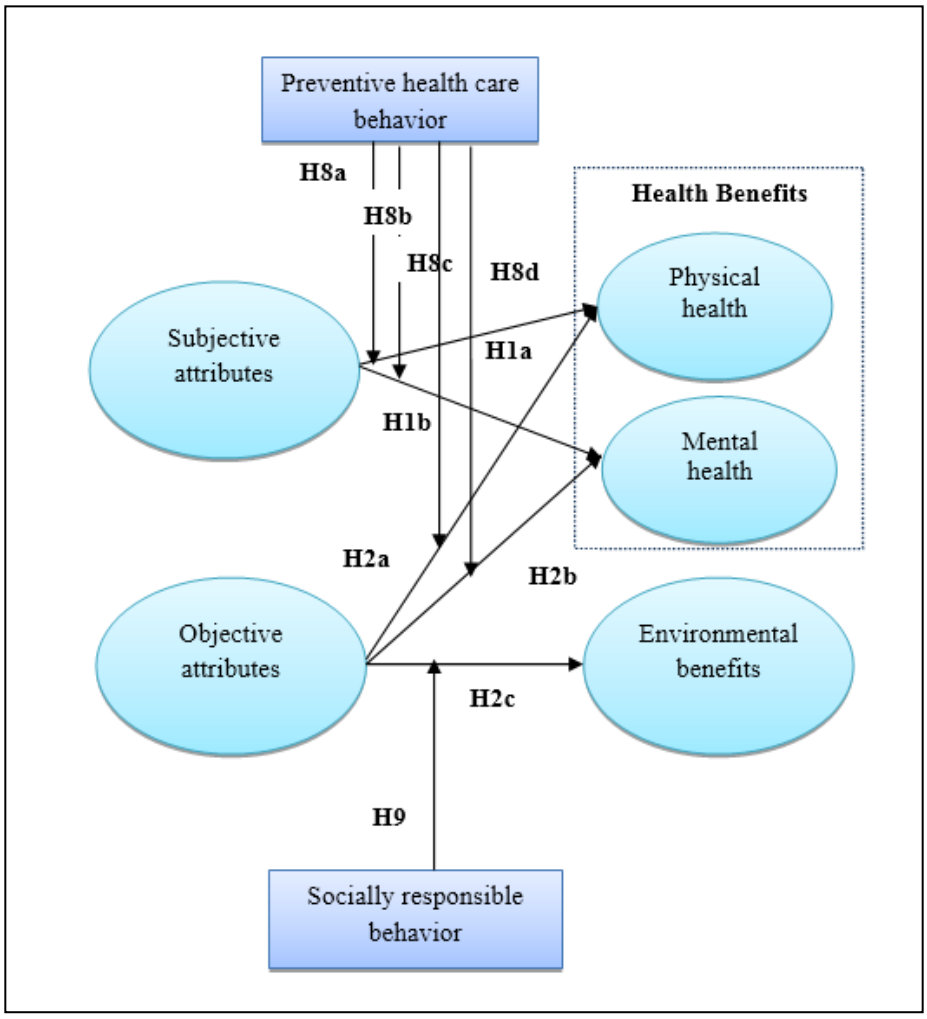

Figure 5. Sub-Model (H8 and H9 Moderators)

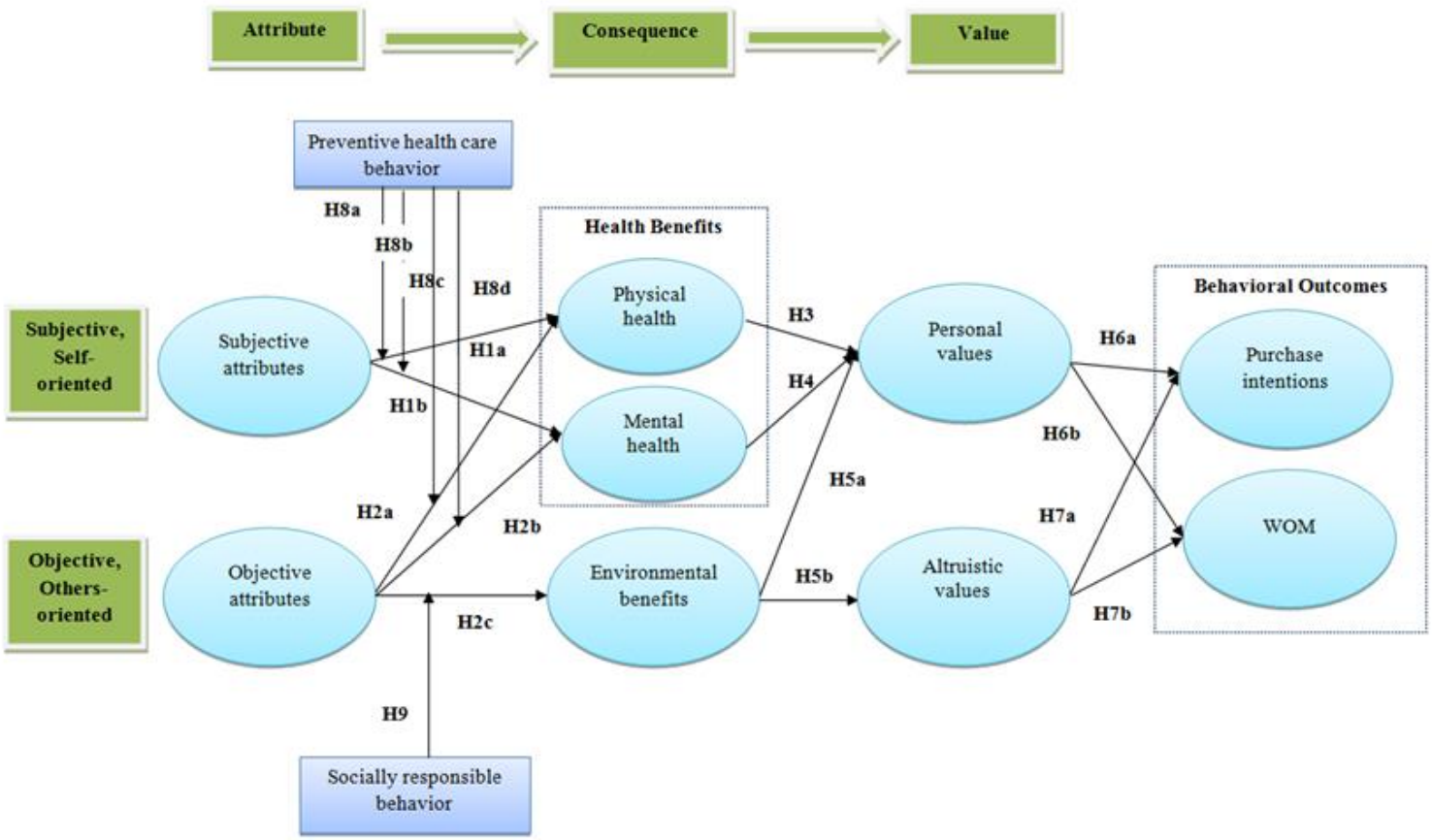

Figure 6. Research Model

RESEARCH DESIGN

The hypotheses developed in Chapter II predict that MET applies to organic food consumption; however, since research on the organic food market is at an early stage of development, this relationship has not been empirically tested. Thus, this study begins with a qualitative investigation in order to validate its constructs. In-depth interviews were conducted, drawing on the laddering technique. The interviews were open-ended, with questions for example, about participants' personal goals for buying organic foods, life experiences related to organic foods, changes in shopping habits, and the shopping experiences in natural/organic supermarkets. Given these underlying approaches, the interviews illuminated the relationship between consumers and organic foods. An interview guide is provided in APPENDIX A.

Guided by the results of the qualitative study, an online, self-administered cross-sectional survey was developed to collect quantitative data. Online data collection techniques are preferable to traditional self-administered methods (e.g., pencil-and-paper) because they offer faster response times, lower cost, wider geographical reach, and more efficient data management (Albaum et al., 2010; Braunsberger et al., 2007; Fadner & Mandese, 2004). Also, online administration helps reduce response errors related to ineligible responses and item omission (Braunsberger et al., 2007). Furthermore, responses to online surveys tend to be less biased in than face-to-face surveys because of the anonymous nature of the Internet environment, thus generating higher levels of data reliability (Braunsberger et al., 2007; Kreuter et al., 2008).

SETTING

Organic food shopping is based on the affordability and the accessibility of organic foods through a variety of sources, including large-scale mainstream grocers (e.g., Wal-Mart and Kroger), natural food supermarket chains (e.g., Whole Food Market and Earth Fare),warehouse clubs (e.g., Sam's club and Costco), premium specialty grocers (e.g., Fresh Market), and local shops (e.g., farmer's markets). While many consumers purchase organic food from grocers, some also grow their own fruits and vegetables in their gardens. This study addresses the consumption of organic foods from all these sources, which are included in the interview and the survey.

DATA COLLECTION

Data were collected from two different groups of participants. For the qualitative data-collection, fifteen organic shoppers were selected for in-depth interviews. Interviews lasted approximately one hour and were audio-recorded. Each interview was transcribed verbatim. Table 3 shows the demographic characteristics of the participants in the interviews. Quantitative data were collected from consumer panels of a marketing research company, C&T Marketing Group, from February 4 to February 6 in 2014. More details about the sampling process and data collection procedures for the two different data-sets are provided in below in the descriptions of the two research approaches.

QUALITATIVE RESEARCH APPROACH

According to Morse (1991), using qualitative methods is appropriate for problems that meet the following criteria: (1) the concept is immature due to lack of theory and previous research, (2) the available theory is inaccurate, inappropriate, incorrect or biased, (3) a need exists to explore and describe a phenomenon and develop a theory and, (4) the nature of the phenomenon is not suited to quantitative measures. Organic food consumption is a theoretically immature phenomenon, in the sense that the research conducted on it so far raises questions about whether it can be sufficiently addressed by available theories. Although there are various theories of consumption within the food-marketing domain that can address some aspects of organic food consumption, a need exists to develop a theory that can provide a comprehensive model of organic food consumption within the consumer domain and support future research streams. Because the nature of organic food consumption is relatively unknown, it is not desirable to develop quantitative measures of organic food consumption. Qualitative research studies are appropriate to enhance the understanding or explanation of a phenomenon that has already been defined in broad terms (Lincoln & Guba, 1985). The primary research problems to be addressed in the qualitative part of this study concern how organic food consumption occurs and how it is experienced by organic shoppers.

SAMPLING AND DESCRIPTION OF INFORMANTS

The persons selected to be interviewed for this study were regular organic shoppers, i.e. shoppers who said that they bought organic foods at least once every two weeks.

Informants were recruited onsite by the researcher and through the snowballing technique. The researcher recruited informants by approaching them while they were shopping at a natural foods supermarket at Knoxville, TN. Using the snowballing technique, the researcher also recruited their friends and family who were also regular organic consumers. Interviews were conducted by appointment at local coffee shops. However, four interviews were conducted at the participants' offices at University of Tennessee due to the participants' preferences. Informants were given gift card incentives at a natural foods supermarket as a compensation for their time.

Table 5. Informant Profile

Name	Gender	Age	Occupation	Ethnicity	People in household
Mary	Female	31	Graduate research assistant in the dept. of forestry, wildlife & fisheries	White	Single
Wendy	Female	32	Worked at Whole Foods	White	Single
Jane	Female	34	Graduate research assistant in the dept. of forestry, wildlife & fisheries	White	Husband
Jin	Female	24	Waitress	White	• Husband • Pets
Kelly	Female	25	College student	White	Single
Kris	Female	26	College student	White	Single
Cindy	Female	22	Working at Panera Bread	White	• Boyfriend • Boyfriend's son
Linn	Female	50	Maryville farmers market manager	White	Grand-daughter
Michelle	Female	36	Researcher in Oak Ridge Associated Universities	White	• Husband • 2-years old daughter
Marz	Female	23	College student	White	• Mother • Father • Sister

Table 5. ***(Continued)***

Name	Gender	Age	Occupation	Ethnicity	People in household
Shell	Female	55	House wife (her father was a farmer)	White	• Husband • Three sons
Andy	Female	40	House wife	White	Husband
Leo	Male	31	Post-doctoral researcher	White	Single
Nate	Male	40	Professor	White	Wife
Hay	Male	35	PhD student	White	Single

Note: Names are pseudonyms. Some ages are estimates.

PROCEDURE

Participants were not directly asked questions about values. Instead they were encouraged to describe shopping behaviors and explain the motivations behind their behavior. Each participant signed a consent form approved by the University Institutional Review Board. Each participant received compensation for participation in the form of a gift certificate to a local organic product supermarket. Field notes by interviewers and demographic information were used to provide a context for the interviews. Both the laddering and the ethnographic technique of grand tour interviews were employed.

Laddering is a one-to-one interviewing technique employing a series of directed probes to reveal how participants link product attributes to their own underlying values (Reynolds & Gutman, 1988). Central to the method is the premise that lower levels imply the presence of higher levels, so that product attributes have consequences that lead to end-state/values. Furthermore, the interview incorporated the ethnographic technique of grand tour, which allowed the participants to let the researcher “walk in their shoes.” Specific experiences were probed further to gain insight into responses that were below

surface level, allowing the researcher to reach higher levels of abstraction in later analysis. The probes were used to access responses dealing with feelings, emotions, and behavioral processes.

DATA ANALYSIS

The means-end method has been used to map organic shoppers' cognitive structures, thus providing insight into their motives. Multiple readings of each data piece capture holistic and grounded images of the informant's experience. Transcripts averaged fifteen to twenty pages of text per participant. Each interview was entirely transcribed into text. The data were then analyzed with coding activities. Coding is used to uncover meaning-units of experiences that emerge from the data. These meaning-units are clustered and organized into concepts and categories (Polkinghorne, 1989). The data were transcribed into the implication matrix (Table 7). In the next step, the hierarchical map of values (HMV) was constructed, which shows the most important attributes, consequences, and values of the respondents and the link between them (Figure 7). The analysis of these data involved developing conceptual categories for the types of values that emerged across participants and for the processes whereby participants' values related to their shopping processes.

The trustworthiness of the data was assessed using a set of well accepted qualitative research criteria. These are credibility, transferability, dependability, conformability, and integrity (Flint, Woodruff, & Gardial, 2002; Hirschman, 1986). In addition, the criteria of fit, understanding, generality, and control (Strauss & Corbin,

1990) were applied. Description of the actions taken to insure the trustworthiness of the study is provided in Table 6.

Table 6. Assessing the Trustworthiness of the Study

Trustworthiness Criteria	Method to Address the Trustworthiness
Credibility	• Lead researcher spent over two year collecting data and finalizing analyses • A one-page open-ended questionnaire was sent to participants that were specifically designed to probe on the core category and its supporting categories.
Transferability	• Theoretical sampling was conducted—participants' role in the experience varied, as did their ethnic backgrounds and life-stages. Participants were from a variety of geographic region in the U.S.
Dependability	• Participants was asked to reflect on man experiences covering recent events as well as similar events that occurred in their childhood (e.g., Participants often commented on the similarity of the event in their childhood foods and shopping).
Conformability	• A one-page open-ended questionnaire was set to participants that was specifically designed to probe on the core category and its supporting categories.
Integrity	• Interviews were conducted professionally, and in non-threatening manner. Informants received detailed outline of anonymity processes and privacy of responses.
Fit	• Fit was addressed by trustworthiness methods of credibility, dependability, and conformability.
Understanding	• Participants confirmed that the interpretation reflected their words.
Generality	• Sufficient length and openness of interviews was insured so that many complex facets of the phenomenon and its concepts could be obtained.
Control	• The participants were able to control most aspects of their experience and were free to elaborate on any of these aspects during the sequence of interviews.

RESULTS

A total of 55 categories were identified by participants, and these were divided into 19 important categories due to the relatively high homogeneity of the collected answers. The hierarchical map represented an abstraction of the values that drive the decisions of the consumers. Seven out of twenty attributes were found to be consumers' most important organic food criteria, i.e., better ingredients, better sensory qualities, traditional production methods, producers, healthy diets, certified labels, and fair trade. These attributes yielded six dominant consequences: well-being, safety, relaxation, saving environment, enjoyment of food, and respect for others. Finally, the values were classified into six categories. However, a more abstract level of values was "happiness," which reflected other terminal values, which is the end-values consumers strive for when consuming organic foods.

Although the final HVM was clear and simple and represented the core constructs, the arrows (A → C → V) were not shown in Figure 7. Because there were so many arrows among categories, the HVM was excessively complex. To reduce the complexity, the arrows were linked to each other. For example, the attribute "better ingredients" was linked to the categories of consequences, "well-being," "safety," "enjoyment of food," "saving environment," and "respect for others." From consequences, well-being was linked to the values "quality of life," "pleasure," and "wisdom." In this way, all categories from lower level (attributes) were connected toward higher levels (values).

The current study began as a means to examine the phenomenon of organic food consumption. While organic food surfaced as a major thread within various aspects of the interpretations and findings, an alternative dominant phenomenon was identified that more accurately captures "what is the nature of buying organic products?" for organic shoppers. The study has found that organic shoppers value their quality of life highly, not only for themselves but also for the sense of inner harmony that it gives them, i.e. of connectedness both with the environment and other people. Among the main attributes, "better ingredients" was perceived as a key element associated with both personal health and improving the environment. These positive consequences ultimately made these organic shoppers happy. In order to illustrate how the participants described their feelings and experiences with organic food in reality, two examples of the transcripts are provided in APPENDIX B. These transcripts are organized by categories to make them easier to review.

Table 7. Implication Matrix

Attributes	Consequences	Values
A1. Chemical-free	C1. Feel good, relaxation	V1. Quality of life
A2. Natural, traditional	C2. Enhances animal welfare	V2. Happiness
A3. Higher food quality	C3. Expensive	V3. Belonging
A4. Absence of pesticides	C4. Long and healthy life	V4. Pleasure, satisfaction
A5. Local markets	C5. Support to farmers	V5. Excitement
A6. Less-known/uniqueness	C6. Nostalgia	V6. The diversity of life
A7. Known origin, producer	C7. Value for money	V7. Personal achievement
A8. Fair trade	C8. Respect for others (people)	V8. Family happiness
A9. Not genetically modified	C9. Less available	V9. Care for future generations
A10. Brand	C10. Control over the food	V10. Responsibility for oneself
A11. Label, logo, certified	C11. Enjoyment of food	V11. Life balance
A12. Nutritious	C12. Increasing energy	V12. Altruism
A.13. Quality of ingredients	C13. Wellbeing	V13. Wisdom
A14. Novelty seeking	C14. Security	V14. A world of beauty
A15. Vegan	C15. More cooking	V15. Inner harmony
A16. Honest	C16. Trust in the grower	(living in accordance with nature)
A17. Hormones, preservation free	C17. Caring for family (reduce the risk for illness)	
A18. Traditional farming methods	C18. Safety of the agricultural workers	
A19. Low cholesterol	C19. Health knowledge	
A20. Better sensory qualities (Taste, texture, freshness, juicy, flavor, color)	C20. Saving environment (protection of natural resources)	

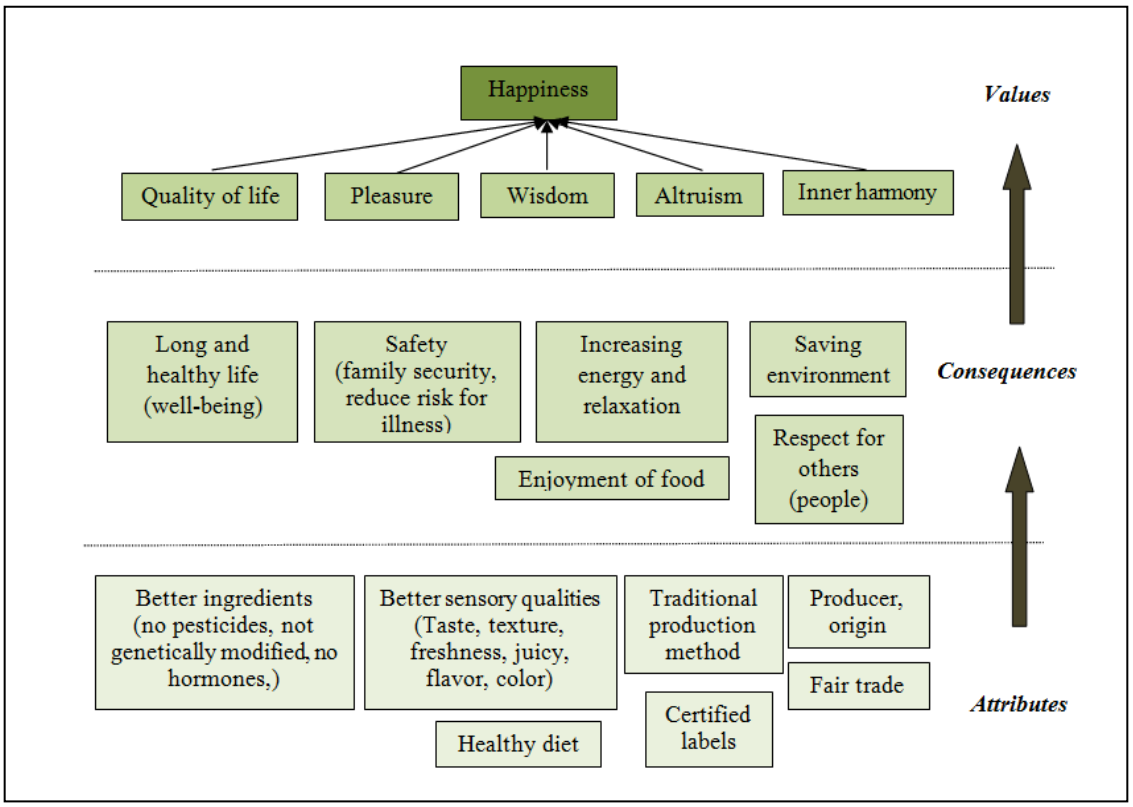

Figure 7. Hierarchical Value Map (HVM)

QUANTITATIVE RESEARCH APPROACH

SAMPLING

The population of this study consisted of consumers who had experienced buying organic foods in the U.S. The sampling frame was constructed from consumer panels managed by C&T Marketing Group, a market research company specializing in consumer online surveys. The firm managed more than 1.5 million U.S. volunteer opt-in panel members composed of respondents who have voluntarily registered to become members of the panel (Callegaro & Disogra, 2008). The firm provides the research sample from its designated sample source, involving random sampling of members

within the target group. In addition, the firm analyzes and validates the data quality to identify inattentive and fraudulent respondents. The survey results are unbiased due to the multi-panel membership of participants; the firm monitors the membership participation over time and removes members with activity that suggests that they fit the profile of professional survey takers. The target respondents of this study were adult consumers (18 or older) who had purchased organic foods in the past month.

PROCEDURE

After the researcher approved the final survey set-up, the marketing research firm launched the online survey. The firm made a standard panel email invitation to invite panel members to take part in the survey. Respondents were reimbursed for their participation through a PayPal account; the survey result indicated that most of respondents completed the survey within 10 minutes.

Data were collected for three days from February 4 to February 6 in 2014. Among the invited members, a total of 748 members accessed the survey. Among them, 154 members were screened out during the screening procedure and 82 participants quit the survey. Ultimately, 512 completed responses were obtained, as planned. The incidence rate was calculated as a proportion of the number of those who successfully completed the survey to the number of total participants. Total participants include both the participants who successfully completed the survey (i.e., 512 participants) and those who attempted to participate in but did not pass the screening questions (i.e., 154 participants). Thus, the incidence rate was 76.9%.

SAMPLE DEMOGRAPHICS

The demographic characteristics of the sample are shown in Table 8. The analysis of respondents' demographic information revealed that the majority (68.9%) of respondents were female. The respondents' age ranged from 18 to 81, and the proportion of the respondents was distributed highly in 31-40 (31%) and 41-50 (24.2%) age group, approximately half of the total respondents. As for annual household income, the respondents represented a range of income group fairly evenly: 18.9% had incomes of $50,000 to 69,999, 18.2% had $70,000 to 89,999, and 16.6 % had $30,000 to 49,999. The majority of respondents (77.6%) had attended some college or earned a bachelor's or a higher educational degree. More than a half (59%) of the respondents were married; and 22.3% were single. Almost half the respondents (51.8%) did not have children under 18; however, 48.2% had children under 18. Slightly more than a half (57.8%) of the respondents had a full-time job; 14.1% had a part-time job; and 12.7% were homemakers. With respect to ethnicity, more than three quarters of the respondents (78.3%) were Caucasian, followed by Asian or Pacific Islander (6.8%), African-American (6.6%), Hispanic (6.4%), and Native-American Indian (1.1%).

Table 8. Demographic Characteristics of Respondents

Demographics		Frequency (N=512)	Percentage
Gender	Female	353	68.9%
	Male	159	31.1%
Age	18-30	74	14.5%
	31-40	159	31%
	41-50	124	24.2%
	51-60	96	18.8%
	61-70	44	8.6%
	71-80	14	2.7%
	81+	1	0.2%
Income	Less than $10,000	21	4.1%
	$10,000-29,999	67	13.1%
	$30,000-49,999	85	16.6%
	$50,000-69,999	97	18.9%
	$70,000-89,999	93	18.2%
	$90,000-109,999	54	10.5%
	$110,000-129,999	35	6.8%
	$130,000-149,999	27	5.3%
	$150,000 or more	33	6.4%
Education	High-school or less	92	18%
	Associate's degree	109	21.3%
	Bachelor's degree	200	39.1%
	Graduate degree	88	17.2%
	Other	23	4.5%
Marital status	Single/Never married	114	22.3%
	Married	302	59%
	Widowed	15	2.9%
	Separated/Divorced	46	9%
	Living with significant other	35	6.8%
Work status	Part-time	72	14.1%
	Full-time	296	57.8%
	Unemployed	24	4.7%
	Retired	37	7.2%
	Homemaker	65	12.7%
	Other	18	3.5%

Table 8. *(Continued)*

Demographics		Frequency (N=512)	Percentage
Ethnicity	White(Caucasian)	401	78.3%
	African-American	34	6.6%
	Native-American Indian	5	1.1%
	Hispanic	33	6.4%
	Asian/Pacific Islander	35	6.8%
	Other	4	0.8%
Children under 18	0	265	51.8%
	1	96	18.8%
	2	89	17.4%
	3	39	7.6%
	4	12	2.3%
	More than 5	11	2.1%

SURVEY DESCRIPTION

The introductory paragraph of the survey provided a general description of the survey as well as contact information for both the researcher and the market research company C&T Marketing Group. After this introduction, the definition of organic food (i.e., "organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Organic meat, poultry, eggs, and dairy products come from animals that are given no antibiotics or growth hormones. Organic food is produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation") was provided to give respondents a context for the actual survey questions that referred to this term. To identify eligible respondents among the panel members contacted, a screening question was also included at the beginning of

the survey. Respondents were not given any clue about whether these questions were screening questions or actual survey questions. In the first question, respondents were asked a simple yes/no question about whether they had purchased organic foods in the past month. The respondents who selected ‘no’ were screened out.

Those who passed the screening question were first asked about their involvement with health and the environment. These questions are not related to organic foods, but to respondents’ perceptions or behaviors regarding health and the environment in everyday life. In the next question, respondents were asked to say how often they bought each category of organic foods (i.e., bread & grains; beverages, dairy; fruits & vegetables; frozen meals; meat, poultry, & eggs; sauces; and snack foods). The remaining sections were composed of questions with following topics: attributes, consequences, values, behavioral outcomes, and demographic information. Before the demographic questions, the respondents were asked about their shopping behaviors, such as where they purchased organic foods (i.e., supermarkets, natural food supermarkets, premium specialty grocers, hypermarkets, warehouse club, and local shops). They were also asked how much more they would be willing to pay for organic foods and how many times they had purchased organic foods in the past month. The survey instrument included 18 items for attributes, 13 items for consequences, 15 items for values, and 8 items for behavioral outcomes (see Appendix D). The questionnaire was designed to be completed in 10 minutes.

INSTRUMENT DEVELOPMENT

The measurement scales employed in this study were adapted from the literature and modified to fit the organic food shopping context. The final measurement items were refined based on the qualitative study (interviews), literature search, a content validity tests and a pre-test. The questionnaire was composed of five sections: (1) attributes, (2) consequences, (3) values, (4) behavioral outcomes, and (5) moderators (i.e., preventive health care behavior and socially responsible behavior).

MEASUREMENT DEVELOPMENT

Measurements were defined in terms of attributes (i.e., subjective attributes and objective attributes), consequences (i.e., physical health, mental health, and environmental benefits), values (i.e., personal values and altruistic values), behavioral outcomes (i.e., purchase intentions and WOM), and moderators (i.e., preventive health care behavior and socially responsible behavior). All the items except "attributes" were measured on a 7-point-Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (7). Table 9 shows the original scale items for the constructs used in this study. The final measurement items are summarized in Table 12.

Measurement of Attributes

As demonstrated by the review of literature in Chapter 1, many of researchers have explored attributes of foods. In this study, the attributes of organic foods are defined as either subjective or objective. Subjective attributes are those qualities of

organic foods what might be perceived differently by each consumer (e.g., taste, quality for price, and healthy diet). Conversely, objective attributes are those qualities of organic foods that are determined by facts and aspects of reality, including information provided on product labels. Within the category of objective attributes of organic foods, two different quality attributes were examined: intrinsic qualities and extrinsic qualities. Intrinsic quality attributes are those associated with the nature of the product itself as well as production-based features such as the absence of pesticides and or genetically modified ingredients. Extrinsic quality attributes are process-based features that are not physically part of the organic foods themselves (e.g. the country of origin and fair trade practices). Given this categorization scheme, items have been adapted from Fotopoulos and Krystallis (2002), who measured the importance of quality for organic foods. In addition, some of these scale items were generated based on results of the qualitative study. For example, some items such as “no pesticides” and “not using genetically modified” were identified as important standards/criteria of organic foods both by the literature and the interviews. An eighteen-item scale was developed to measure the attributes of organic foods (nine items represent subjective attributes and another nine items represent objective attributes). All the items were measured on a 7-point Likert scale ranging from ‘not important’ (1) to ‘important’ (7).

Measurement of Consequences

This study addresses two consequences of consuming organic foods: health benefits and environmental benefits. Health benefits include both physical health and

mental health. A four-item scale of physical health was adopted from Magnusson's (2003) study (e.g., avoiding health problems and issues). Another four-item scales of mental health was adapted from Fotopoulos and Krystallis's (2002) study. Because Fotopoulos and Krystallis's (2002) scale includes overall health benefits, this scale was modified to emphasize mental health only (e.g., "control my stress"). For environmental benefits, a five-item scale was adapted from Magnusson's (2003) study. Among these five items, one item was modified to simplify the unnecessarily difficult term 'eutrophication' used by Magnusson (2003). For example, the statement of "reduce the eutrophication of lakes and watercourses" was modified as "reduce the amount of water." Because organic farming is related to reducing the amount of water, the statement is modified to fit in this study. In sum, a thirteen-item scale was used to measure consequences.

Measurement of Values

In this study, two types of values were identified, personal values and altruistic values. A nine-item scale of personal values was adapted from Rokeach's (1973) Value Survey. The original scale measurement contained eighteen items; however, nine items were deleted due to irrelevance (e.g., mature love, salvation, and true friendship) in the organic food shopping context. For altruistic values, a six-item scale was adapted from Stern et al. (1999). This original study developed measurement scales for environmentalism based on the value-belief-norm theory. However, this scale did not accurately reflect altruistic values related to organic. Thus, modifications were made to

tailor the altruistic-values items to the organic food context. For example, “a world of peace, free of war” was revised as “a world at peace.” A total of a fifteen items were used as a measure of values.

Measurement of Behavioral Outcomes

Behavioral outcomes were measured with regard to purchase intentions and WOM. For purchase intentions of organic foods, four items of measurement were adapted from Heitmann’s et al. (2007) study of loyalty. Because this original study used a five-item scale developed for the context of consumer electronics, the scale items were modified to fit the context of this study. For WOM, a five-item scale was adapted from Brown’s et al. (2005) study. However, because the original items were developed in the context of automobile dealerships, the context of the statements was also modified to fit the context of organic foods.

Measurement of Moderators

In this study, two moderators were examined, preventive health care behavior and socially responsible behavior. A eight-item scale measured preventive health care behavior, adapted from Jayanti and Burns’s (1998) study of preventive health care behavior. In this original study, seventeen scale items were developed to measure preventive health care behavior. Because many of these items were not suitable for context of organic food (e.g., “take precautions against sexually transmitted diseases”), eight items were selected to represent preventive health care behavior. For socially

responsible behavior, a seven-item measurement scale was adopted from Web, Mohr, and Harris's (2008) study of socially responsible behavior. Table 9 shows the original scale items for all constructs.

Table 9. Original Scale Items for Constructs

Construct name in this study	Construct name in original study	Scales	Reliability	Source
Objective attributes Subjective attributes	Quality	• Appearance • Size • Color • Transparency • Price • Brand name • Country or origin • Product area • Nutrition value • Production method • Taste • Structure • Freshness • Healthiness • Naturalness • Environmental friendliness • Traditional image	N/A	Fotopoulos & Krystallis (2002)
Physical health	Health	• Avoid health problems and issues. • Stay healthy longer. • Reduce the risk for illness. • Reduce the risk for illness in my family health.	0.89	Magnusson et al. (2003)
Mental health	Health	• Rich in vitamins • Rich in proteins • Rich in fiber • Nutritional • Poor in calories • Helping me control my weight • Poor in fat • Helping me control my stress • Help me in my day	N/A	Fotopoulos & Krystallis (2002)

Table 9. ***(Continued)***

Construct name in this study	Construct name in original study	Scales	Reliability	Source
		• Helping me control my stress • Help me in my day • Helping me relax • Keeping me awake • Making my mood		
Environmental benefits	Environment	• Improve the state of the environment. • Reduce the use of artificial fertilizers in agriculture. • Reduce the pollution of the soil. • Reduce the use of herbicides and pesticides in agriculture. • Reduce the eutrophication of lakes and watercourses.	0.90	Magnusson et al. (2003)
Personal values	Personal values	• A comfortable life • An exciting life • A sense of accomplishment • A world at peace • A world of beauty • Family security • Happiness • Inner harmony • Pleasure • Self-respect • Social recognition • Wisdom • Equality • Freedom • Mature love • National security • Salvation • True friendship • Wisdom	0.70-0.79	Rokeach (1973)

Table 9. ***(Continued)***

Construct name in this study	Construct name in original study	Scales	Reliability	Source
Altruistic values	Altruistic values	• Social justice, correcting injustice, care for the weak • Preventing pollution, conserving natural resources • Equality, equal opportunity for all • Unity with nature, fitting into nature • A world of peace, free of war and conflict • Respecting the earth, harmony with other species • Protecting the environment, preserving nature	0.86	Stern et al. (1999)
Purchase intentions	Loyalty	• It is very likely that I would purchase this same product (or its successor) again. • I am willing to pay a price premium over competing products to be able to purchase this product (or its successor) again. • I would only consider purchasing this product again, if it would be substantially cheaper. (r) • Commercials regarding competing brands are not able to reduce my interest in buying the same product (or its successor) again. • I would purchase this product (or its successor) again, even if it receives bad evaluations by the media or other people.	0.81	Heitmann et al. (2007)
WOM	WOM	• Mentioned to others that you do business with the dealership. • Made sure that others know that you do business with the dealership. • Spoke positively about the dealership employee(s) to others. • Recommended the dealership to family members. • Spoke positively of the dealership to others. • Recommended the dealer to acquaintances. • Recommended the dealership to close personal friends.	0.95	Brown et al. (2005)

Table 9. ***(Continued)***

Construct name in this study	Construct name in original study	Scales	Reliability	Source
Preventive health care behavior	Preventive health care behavior	• Eat a well-balanced diet • See your dentist for regular checkups • Eat fresh fruits and vegetables • Reduce amount of salt in your diet • Watch for salt content in diet • Exercise regularly • Watch the amount of fat you consume • Take precautions against sexually transmitted diseases • Pay attention to your sugar intake • Pay attention to the amount of red meat you eat • Cut back on snacks and treats • Avoid foods with additives and preservatives • Get enough rest and sleep • Reduce stress and anxiety • Maintain a balance between "work" and "play" • Pay attention to the amount of alcohol you drink • Try to avoid smoking	0.81	Jayanti & Burns (1998)
Socially responsible behavior	Socially responsible behavior *(ENVIRON)*	• I avoid buying from companies that harm endangered plants or animals. • Whenever possible, I walk, ride a bike, car pool, or use public transportation to help reduce air pollution. • I avoid using products that pollute the air. • I avoid buying products that pollute the water. • I make an effort to avoid products or services that cause environmental damage. • I avoid buying products that are made from endangered animals. • I limit my use of energy such as electricity or natural gas to reduce my impact on the environment.	0.88	Webb, Mohr, & Harris (2008)

CONTENT VALIDITY TEST

To ensure content validity, three academic experts in Retail, Hospitality, and Tourism Management at the University of Tennessee reviewed the measurement scale items adapted from the literature. These researchers evaluated the measurement items in terms of the clarity of the questions, readability, and content validity. Among these academic experts, especially the food scientist carefully evaluated each item and statement. For example, there was a suggestion about revising the term, ‘organic food’ to ‘organically grown food’ because technically ‘organic food’ is not correct. However, consumers are more familiar with using the term ‘organic food’ than ‘organically grown food’ and eventually the researcher settled on a consistent use of the term, ‘organic food’ throughout the survey. To ensure that respondents clearly understood the term, a definition of organic food was provided in the introduction to the survey.

Several revisions were made to the original survey before administration, based on the feedback from experts. For example, among each construct, many items of attributes were indicated as double-barreled items, i.e. ones that addressed two themes in a single item. In addition, small changes were made in several of the items. For example, “country of origin” was revised as “country of production” and “production method” was revised as “information about the production method.” In other section, when organic food categories were classified, ‘dairy’ was separated from ‘poultry’ and ‘eggs.’

After this revision by experts, the survey items were also reviewed by the organic shoppers who had previously participated in the interview for the qualitative study. Because these consumers were familiar with many aspects of organic food, they were

able to evaluate the survey items effectively for transparency. Finally, the measurement items for all constructs were reviewed by eleven doctoral students majoring in Retail, Hospitality, and Tourism Management at the University of Tennessee. These students evaluated each item with respect to wording, fit with construct, item clarity, and completeness. Revisions were made based on these evaluators' feedback before the pre-test.

PRE-TEST

A pre-test survey was administered to refine the measurement items generated from the previous steps. A convenience sample of undergraduate students who had purchased organic foods was recruited from two courses (i.e., Science Foods and Food Service Operations) in the department of Retail, Hospitality, and Tourism Management at the University of Tennessee. To ensure that participants were motivated to exert effort, the objective of the study and a brief instruction of the survey were provided to the students. A total of 78 surveys were collected; 13 surveys among them were excluded because the respondents were not qualified (they did not buy organic foods). A total 65 usable surveys were obtained.

The descriptive statistics for measurement items used in the pre-test are shown in Table 10. Means for Likert scale items ranged from 2.61 to 6.29, and standard deviations ranged from 0.8423 to 2.378. To check the univariate normality of data, values for skewness and kurtosis were calculated. The absolute values of skewness values ranged from 0.004 to 2.625, and the absolute value of kurtosis ranged from 0.073 to 3.149. The

kurtosis value of A6 (3.149) was greater than the threshold value of ±3.0 (Bollen, 1989), indicating that the distribution of A6 is not normal.

To check the unidimensionality of the constructs, reliabilities of the constructs using Cronbach's alpha coefficient were measured. The reliabilities of the constructs are shown in Table 11. They ranged from .703 to .939, demonstrating satisfactory levels of internal consistency (Nunnally & Bernstein, 1994). However, the reliability of purchase intentions was 0.518 because one item was a reversed statement (i.e., "I would purchase organic foods, even if it receives bad evaluations by the media or other people.") which made it ambiguous. Because respondents were confused by the statement, this item was deleted from the final measurement scale. The final measures for the main survey are organized in Table 12.

SUMMARY

This chapter discussed the research methods that were used to describe the research design and test the research model and the research hypotheses. The first section of this chapter described the research model and restated the research hypotheses presented in Chapter II. The second section described the qualitative research approach in terms of research design, including sampling, procedures, data analysis, and results. The third section presented the quantitative research approach for the qualitative study and described sampling, procedures, sample demographics, survey instrument development, and the survey itself. The last section, instrument development, was explained in terms of the measurements of constructs, the content validity tests, and a pre-test.

Table 10. Assessment of Normality

Construct	Item	Min	Max	Mean	STD	Skewness	Kurtosis
Preventive health care behavior	H1	1	7	5.06	1.730	-0.545	-0.778
	H2	1	7	4.49	1.829	-0.216	-0.916
	H3	2	7	5.07	1.670	-0.499	-0.923
	H4	2	7	5.43	1.141	-0.642	-0.427
	H5	3	7	6.09	0.913	-0.821	0.536
	H6	3	7	5.32	1.238	-0.241	-0.993
	H7	1	1	5.23	1.521	-0.524	-0.724
	H8	1	1	4.27	1.863	-0.321	-0.842
Socially responsible behavior	SE1	1	7	4.52	1.750	-0.292	-0.680
	SE2	1	7	3.92	1.734	-0.119	-0.838
	SE3	1	7	4.10	1.687	-0.174	-0.656
	SE4	1	7	4.00	1.600	-0.342	-0.428
	SE5	1	7	4.30	1.676	-0.651	-0.664
	SE6	1	7	4.86	1.810	-0.557	-0.586
	SE7	1	7	4.84	1.502	-0.193	-0.339
Attribute	A1	1	7	5.56	1.322	-1.367	2.145
	A2	1	7	5.46	1.335	-1.032	1.173
	A3	3	7	5.93	1.013	-0.895	0.598
	A4	4	7	6.29	0.842	-1.090	0.617
	A5	4	7	6.20	1.033	-1.030	-0.217
	A6	1	7	5.81	1.236	-1.429	3.149
	A7	1	7	6.32	1.017	-2.625	0.710
	A8	2	7	6.16	1.139	-1.454	2.031
	A9	1	7	3.43	2.378	0.315	-1.539
	A10	1	7	6.04	1.242	-2.155	0.751
	A11	1	7	3.73	1.830	0.007	-0.945
	A12	1	7	4.07	1.796	-0.202	-0.785
	A13	1	7	5.15	1.603	-0.916	0.593
	A14	1	7	4.33	1.651	-0.71	-0.771
	A15	1	7	5.23	1.750	-0.882	-0.92
	A16	1	7	5.38	1.664	-0.934	0.088
	A17	1	7	4.46	1.750	-0.439	-0.651
	A18	1	7	3.98	1.948	0.009	-1.185
	A19	1	7	5.12	1.824	-0.698	-0.488
Consequence (Health)	C1	1	7	5.26	1.554	-0.788	0.136
	C2	1	7	2.61	1.496	-1.442	1.842
	C3	1	7	5.35	1.643	-0.920	0.271
	C4	1	7	5.13	1.784	-0.743	-0.297
	C5	1	7	4.86	1.919	-0.508	-0.973
	C6	1	7	3.90	1.909	0.150	-1.018
	C7	1	7	3.86	1.933	0.083	-1.029
	C8	1	7	4.72	1.842	-0.398	-0.832
Consequence (Environment)	CE1	1	7	4.15	1.847	-0.263	-1.042
	CE2	1	7	4.24	1.794	-0.199	-0.999
	CE3	1	7	4.10	1.829	-0.117	-1.028

Table 10. ***(Continued)***

Construct	Item	Min	Max	Mean	STD	Skewness	Kurtosis
	CE4	1	7	4.40	1.618	-0.317	-0.612
	CE5	1	7	4.24	1.768	-0.335	-0.758
Value	V1	1	7	4.43	1.590	-0.242	-0.220
	V2	1	7	3.92	1.511	-0.183	-0.204
	V3	1	7	4.38	1.893	-0.322	-0.770
	V4	1	7	3.78	1.866	-0.630	-1.011
	V5	1	7	3.83	1.824	0.004	-0.863
	V6	1	7	3.81	1.957	0.190	-0.936
	V7	1	7	4.32	1.912	-0.181	-1.093
	V8	1	7	4.24	1.985	-0.239	-0.956
	V9	1	7	4.50	1.880	-0.427	-0.632
	V10	1	7	4.56	1.960	-0.576	-0.721
	V11	1	7	3.41	1.919	0.174	-1.333
	V12	1	7	3.81	2.006	0.058	-1.190
	V13	1	7	4.98	1.891	-0.749	-0.388
	V14	1	7	3.90	1.720	-0.100	-0.959
	V15	1	7	4.47	1.904	-0.369	-0.101
	V16	1	7	4.10	1.896	0.167	-1.040
WOM	W1	1	7	5.07	1.613	-0.704	-0.073
	W2	1	7	4.89	1.754	-0.487	-0.749
	W3	2	7	5.72	1.218	-0.888	0.447
	W4	1	7	5.73	1.326	-1.282	1.961
	W5	1	7	5.64	1.407	-1.037	0.893
Purchase Intention	P1	1	7	5.55	1.741	-1.000	-0.167
	P2	1	7	4.83	1.980	-0.567	-0.805
	P3	1	7	3.13	2.242	0.491	-1.223
	P4	1	7	3.44	1.820	0.362	-0.871

Table 11. Pre-Test: Reliability of Construct

Construct	Number of Items	Reliability (Cronbach's alpha)
Preventive Health Care Behavior	8	.703
Socially Responsible Behavior	7	.917
Subjective Attribute	9	.746
Objective Attribute	10	.887
Physical Health	4	.933
Mental Health	4	.894
Environmental benefits	5	.931
Personal Value	8	.926
Altruistic Value	8	.939
WOM	5	.914
Purchase Intention	4	.518

Table 12. Summary of Final Measurement

Construct	Scale Items
Subjective attributes	**ATT1:** Texture/Tenderness
	ATT2: Color/Aroma
	ATT3: Smell/Flavor
	ATT4: Taste
	ATT5: Quality for price
	ATT6: Safety
	ATT7: Freshness
	ATT8: Healthy diet
	ATT9: Nutritional value
Objective attributes	**ATT10:** Certified organic label
	ATT11: No additives or residues from fertilizers
	ATT12: No pesticides or herbicides
	ATT13: Not using genetically modified ingredients
	ATT14: Brand name
	ATT15: Country of production
	ATT16: Information about the production method
	ATT17: Fair trade practices
	ATT18: Packaged in recycled material
Physical health	**PHH1:** Avoid health problems and issues
	PHH2: Stay healthy longer
	PHH3: Reduce the risk for illness
	PHH4: Reduce the risk for illness in my family health
Mental health	**MTH1:** Have a good conscience.
	MTH2: Control my stress
	MTH3: Relax
	MTH4: Increase my energy
Environmental benefits	**IMP1:** Improve the state of the environment
	IMP2: Reduce the use of artificial fertilizers in agriculture.
	IMP3: Reduce the pollution of the soil.
	IMP4: Reduce the use of herbicides and pesticides in agriculture
	IMP5: Reduce the amount of water
Personal values	**VAL1:** A comfortable life.
	VAL2: A sense of accomplishment
	VAL3: Family security
	VAL4: Happiness
	VAL6: Pleasure
	VAL7: Self-respect
	VAL13: Social recognition
	VAL14: Wisdom
	VAL10: An exciting life

Table 12. ***(Continued)***

Construct	Scale Items
Altruistic values	**VAL5:** Inner harmony (respecting the earth)
	VAL8: Quality of life
	VAL9: Conservation of natural resources
	VAL11: A world at peace.
	VAL12: A world at beauty
	VAL15: Social justice
Purchase intentions	**PI1:** It is very likely that I would purchase organic food.
	PI2: I am willing to pay a price premium for organic foods.
	PI3: I would consider purchasing organic foods, even if it is expensive.
WOM	**WOM1:** I would mention to others that I buy organic food.
	WOM2: I want to make sure that others know the benefits of buying organic food.
	WOM3: I would speak positively about organic food.
	WOM4: I would recommend eating organic foods to family members.
	WOM5: I would recommend eating organic foods to close personal friends.
Preventive health care behavior	**PHB1:** I eat a well-balanced diet.
	PHB2: I see my dentist for regular checkups.
	PHB3: I exercise regularly.
	PHB4: I take precautions against sexually transmitted diseases.
	PHB5: I get enough rest and sleep.
	PHB6: I maintain a balance between "work" and "play."
	PHB7: I pay attention to the amount of alcohol I drink.
	PHB8: I try to avoid smoking.
Socially responsible Behavior	**SR1**: I avoid buying from companies that harm endangered plants or animals.
	SR2: Whenever possible, I walk, ride a bike, car pool, or use public transportation to help reduce air pollution.
	SR3: I avoid using products that pollute the air.
	SR4: I avoid buying products that pollute the water.
	SR5: I make an effort to avoid products or services that cause environmental damage.
	SR6: I avoid buying products that are made from endangered animals.
	SR7: I limit my use of energy such as electricity or natural gas to reduce my impact on the environment.

CHAPTER IV
DATA ANALYSES AND RESULTS

This chapter presents analyses of the data collected for this study and the results of the tests for the hypotheses proposed in Chapter II. The research model and the hypotheses were tested using structural equation modeling (SEM). The two-step approach (Anderson & Gerbing, 1988) was used to (1) validate the measurement model, and (2) test the proposed hypotheses. First, confirmatory factor analysis (CFA) evaluated whether the measurement items reliably reflected the hypothesized latent constructs. Second, SEM was used to examine the causal relationships among the latent variables. Both the measurement model and the structural model were assessed using AMOS 20 with the maximum likelihood method. The model fits of the estimated models were assessed by the chi-square (χ^2) tests, the ratio of chi-square to degrees of freedom, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA).

The first section of this chapter provides descriptive analyses of respondents' organic food shopping behavior. The second section presents preliminary analyses of the core data, including the mean, standard deviation, minimum values, maximum values, skewness, and kurtosis. The third section evaluates the measurement model of the study including the second-order factor analysis. The last section presents an evaluation of the structural model and the results of the hypothesis testing.

DESCRIPTIVE CHARACTERISTICS OF THE SAMPLE

The first step in data analysis was a description of respondents' organic food shopping behaviors, based on their responses to the question about how often they purchased various organic food categories. The most frequently purchased categories were fruits & vegetables (with 61.5% answering "always" or "almost always"), dairy products (46.7%), meat, poultry, & eggs (44.9%), and bread & grain (40%)". Conversely, frozen meals (22.3%) and beverages (19.2%) were either "almost never" or "never" purchased. The respondents purchased a fairly high percentage of sauces and snack foods, with 31.4% and 33.4% respectively answering "sometimes" regarding their purchase of these items. In response to the question about how many times they had purchased organic foods in the past month, 34.2% of the respondents said that they had done so 6 to 10 times; 32.4%, 1 to 5 times; 17.4% , 11 to 15 times; 6.6%, 16 to 20 times; and 9.4%, more than 20 times (Table 14). The majority of the respondents have been purchasing organic foods more than four years (72.5%) and 37.5% have been purchasing organic foods more than ten years (Table 15).

The respondents purchased organic food products at various kinds of retail stores. The most frequented retail stores-- as calculated by combining the percentage of respondents who answered "usually" and "always"-- were supermarkets (49.2%), natural foods supermarkets (47.2%), and local shops (40.9%). Particularly, natural foods supermarkets received the top number of "always" ratings on this question. On the other hand, warehouse club (62.3), hypermarkets (56%), and premium specialty grocers (54.6%) were rarely frequented, as calculated by combining the percentage of

respondents who answered “never” and “sometimes.” Warehouse clubs (37.7%) and premium specialty grocers (29.6%) were especially targeted for “never” ratings (Table 16). The majority of respondents were willing to pay more for organic foods: 34% of respondents were willing to pay 5% to 10% more and 23% were willing to pay 11 to 20% more. Only 4.3% of respondents were not willing to pay more for organic foods (Table 17).

Table 13. Frequency of purchases of organic food categories

Category	Never	Almost Never	Sometimes	Fairly Often	Almost Always	Always
Bread & Grains (e.g., rice and oats)	2.5%	4.1%	24%	29.3%	24%	16%
Beverages	5.3%	13.9%	29.7%	23.6%	15.2%	12.3%
Dairy (e.g., yogurt and milk)	1.6%	3.5%	21.5%	26.8%	24.2%	22.5%
Fruits & Vegetables	0%	2%	10.2%	28.1%	35.5%	26%
Frozen meals	8.8%	13.5%	27.7%	22.1%	15.4%	12.5%
Meat, Poultry, & Eggs	2.3%	2.7%	20.5%	29.5%	25%	19.9%
Sauces	7.4%	11.3%	31.4%	20.3%	16.8%	12.7%
Snack Foods	3.3%	9.2%	33.4%	23.2%	19.1%	11.7%

Table 14 Frequency of Purchases of Organic Foods in the Past Month

	Frequency	Percent
1-5 times	166	32.4%
6-10 times	175	34.2%
11-15 times	89	17.4%
16-20 times	34	6.6%
More than 20 times	48	9.4%
Total	512	100%

Table 15. The Period of Purchasing Organic Foods

Periods	Percent
1-6 months	2.9%
7-11months	1%
1 year	9%
2-3 years	14.6%
4-5 years	20.7%
6-7 years	8.6%
8-9 years	5.7%
10-11 years	13%
12-13 years	3.6%
14-15 years	2.3%
16-17 years	5.4%
18-19 years	5.5%
20+ years	7.7%
Total	100%

Table 16. Frequency of Store Types

	Never	Sometimes	Often	Usually	Always
Supermarkets (e.g., Kroger, Food City)	4.8%	22.2%	23.8%	31.3%	17.9%
Natural foods supermarkets (e.g., Whole Foods, Earth Fare)	15.1%	24.2%	13.5%	25.8%	21.4%
Premium specialty grocers (e.g., Fresh Market)	29.6%	25%	15.3%	17.9%	12.3%
Hypermarkets (e.g., Walmart, Target)	25%	31%	17.3%	15.5%	11.3%
Warehouse club (e.g., Sam's club, Costco)	37.7%	24.6%	16.3%	12.3%	9.1%
Local shops (e.g., Farmer's market)9%	16.1%	23.4%	19.6%	23.4%	17.5%

Table 17. Willingness to Pay More for Organic Foods

Percentage pay	Frequency	Percent
0%	22	4.3%
Less than 5%	71	13.9%
5%-10%	174	34%
11%-20%	118	23%
21%-30%	69	13.5%
31%-40%	26	5%
41%-50%	17	3.3%
More than 50%	15	3%
Total	512	100%

PRELIMNARY ANALYSES

The descriptive statistics of measurement items are shown in Table 18. The minimum values, maximum values, means, and standard deviations of each measurement item were calculated. The mean values ranged from 4.47 to 6.43, and the standard deviations ranged from 0.872 to 1.889 on the 7-point scale. Values for skewness and kurtosis were calculated to check the univariate normality of the data. The absolute values of skewness ranged from 0.0452 to 2.188, and the absolute values of kurtosis ranged from 0.076 to 4.862. The kurtosis values of ATT7 (3.190), W2 (3.190), PHB4 (4.862), and PHB 8 (3.019) were greater than the threshold value of ±3.0 (Bollen, 1989), indicating that the distribution of these four items is not normal. Thus, the four items (ATT7, W1, PHB4, and PHB8) were eliminated from both the final measurement model and the structural model. The reliabilities (using Cronbach's alpha coefficient) of constructs range from 0.712 to 0.968, demonstrating satisfactory levels of internal consistency (Table 19).

Table 18. Assessment of normality

Construct	Item	Min	Max	Mean	STD	Skewness	Kurtosis
Subjective attribute s	ATT1	1	7	5.73	1.218	-1.040	1.363
	ATT2	1	7	5.76	1.208	-0.923	0.781
	ATT3	1	7	6.15	1.072	-1.400	2.457
	ATT4	1	7	6.43	1.032	-1.232	2.526
	ATT5	1	7	6.06	1.045	-1.220	1.851
	ATT6	1	7	6.25	0.988	-1.486	2.584
	ATT7	1	7	6.42	0.984	-1.728	3.190
	ATT8	2	7	6.16	0.982	-1.159	1.239
	ATT9	2	7	6.27	0.872	-1.138	1.033
Objective attributes	ATT10	1	7	4.47	1.789	-0.452	-0.663
	ATT11	1	7	5.64	1.442	-1.215	1.269
	ATT12	2	7	6.04	1.094	-1.195	1.249
	ATT13	1	7	5.66	1.252	-0.982	1.009
	ATT14	1	7	6.23	1.031	-1.485	2.300
	ATT15	1	7	6.34	1.082	-1.323	2.920
	ATT16	1	7	5.72	1.230	-1.096	1.464
	ATT17	1	7	5.53	1.347	-1.031	-1.023
	ATT18	1	7	6.24	1.049	-1.587	2.806
Physical Health	PHH1	1	7	5.79	1.169	-0.769	0.103
	PHH 2	1	7	5.88	1.125	-0.976	0.842
	PHH 3	1	7	5.90	1.133	-0.956	0.710
	PHH 4	1	7	5.86	1.179	-1.042	1.060
	MTH1	1	7	5.74	1.259	-1.082	1.255
	MTH2	1	7	4.99	1.597	-0.572	-0.250
	MTH3	1	7	5.01	1.627	-0.629	-0.183
	MTH4	1	7	5.39	1.459	-0.885	0.423
Environmental benefits	IMP1	1	7	5.92	1.141	-1.085	1.365
	IMP2	1	7	6.11	1.061	-1.341	2.390
	IMP3	1	7	6.05	1.082	-1.263	1.968
	IMP4	1	7	6.17	1.035	-1.431	2.934
	IMP5	1	7	5.92	1.232	-1.252	1.721
Personal values	VAL1	1	7	5.11	1.621	-0.836	0.097
	VAL2	1	7	4.69	1.768	-0.468	-0.612
	VAL3	1	7	5.34	1.574	-0.949	0.340
	VAL4	1	7	4.99	1.743	-0.759	-0.246
	VAL6	1	7	5.14	1.673	-0.868	0.096
	VAL7	1	7	5.05	1.707	-0.711	-0.238
	VAL13	1	7	5.17	1.629	-0.843	0.149
	VAL14	1	7	5.57	1.435	-1.142	1.124
	VAL10	1	7	4.94	1.713	-0.669	-0.297

Table 18. ***(Continued)***

Construct	Item	Min	Max	Mean	STD	Skewness	Kurtosis
Altruistic values	VAL5	1	7	5.63	1.409	-1.195	1.471
	VAL8	1	7	4.84	1.767	-0.680	-0.363
	VAL9	1	7	5.81	1.357	-1.452	2.257
	VAL11	1	7	5.31	1.609	-1.059	0.649
	VAL12	1	7	4.56	1.904	-0.466	-0.815
	VAL15	1	7	4.92	1.791	-0.720	-0.308
WOM	W1	1	7	5.71	1.375	-1.235	1.494
	W2	1	7	6.16	1.658	-2.044	3.019
	W3	1	7	5.66	1.402	-1.205	1.361
	W4	1	7	6.04	1.098	-1.159	1.273
	W5	1	7	5.99	1.236	-1.509	2.623
Purchase Intention	P1	1	7	5.97	1.224	-1.490	2.623
	P2	1	7	6.20	1.044	-1.419	2.129
	P3	1	7	5.31	1.476	-0.945	0.675
	P4	1	7	5.37	1.420	-0.922	0.687
Preventive health care behavior	PHB1	2	7	5.85	1.018	-0.696	0.076
	PHB2	1	7	5.73	1.663	-1.496	1.499
	PHB3	1	7	5.52	1.548	-1.150	0.897
	PHB4	1	7	6.19	1.375	-2.188	4.862
	PHB5	1	7	5.70	1.336	-1.233	1.559
	PHB6	1	7	5.83	1.137	-0.825	0.206
	PHB7	1	7	6.28	1.073	-1.695	2.857
	PHB8	1	7	6.16	1.658	-2.044	3.019
Socially responsible behavior	SR1	1	7	5.64	1.377	-1.071	1.041
	SR2	1	7	4.79	1.889	-0.586	-0.732
	SR3	1	7	5.39	1.439	-0.793	0.191
	SR4	1	7	5.54	1.356	-0.938	0.711
	SR5	1	7	5.60	1.341	-0.976	0.895
	SR6	1	7	6.09	1.264	-1.659	2.794
	SR7	1	7	5.77	1.340	-1.201	1.331

Table 19. : Reliability of Construct

Construct	Number of Items	Reliability (Cronbach's alpha)
Subjective Attribute	9	0.918
Objective Attribute	9	0.868
Physical Health	4	0.942
Mental Health	4	0.907
Environmental benefits	5	0.932
Personal Value	9	0.968
Altruistic Value	6	0.924
WOM	5	0.945
Purchase Intentions	3	0.783
Preventive Health Care Behavior	8	0.712
Socially Responsible Behavior	7	0.910

MEASUREMENT MODEL EVALUATION

Confirmatory factor analysis (CFA) was conducted to evaluate the measurement model. The unidimensionality, reliability, construct validity, and model fit of the measurement model were all evaluated. First, CFA was conducted for each construct. Second, CFA was conducted for the measurement model, in which individual manifest variables were loaded on their appropriate latent variables and all the latent variables were correlated with each other.

CFA FOR EACH CONSTRUCT

CFA was conducted for the eleven constructs separately: subjective attributes, objective attributes, physical health benefits, mental health benefits, environmental benefits, purchase intentions, WOM, preventive health care behavior, and socially responsible behavior. Fit statistics for the measurement models of each construct are

provided in Table 20. The constructs having three measurement items (i.e., purchase intentions) resulted in zero degrees of freedom.

Model Improvement

To improve the model fit, three statistical criteria were used to evaluate the models: standardized regression weights, standardized residual covariance, and modification indices (MIs). A standardized regression weight less than 0.4 is unacceptable due to measurement error (Singh, 1995). Also, a high standardized residual covariance (i.e., absolute values greater than 2.58) indicates a substantial prediction error (Joreskog & Sorbom, 1988). MI is a univariate index that estimates the amount of an unestimated relationship to improve the overall fit of the model (Joreskog & Sorbom, 1988). Excessively high MI is an indication of misfit.

Table 20: Each construct: Fit statistics

Construct	Number of items	χ^2 (df)	χ^2/df	CFI	RMSEA	TLI
Subjective attributes	8	467.327(20)	23.366	0.829	0.209	0.760
Objective attributes	9	579.471(27)	21.462	0.780	0.200	0.707
Physical health	4	37.236(2)	18.618	0.982	0.186	0.945
Mental health	4	31.792(2)	15.896	0.982	0.171	0.946
Environment benefits	5	40.394(5)	8.079	0.985	0.118	0.969
Personal values	9	387.297(27)	14.344	0.928	0.162	0.903
Altruistic values	6	191.559(9)	21.284	0.928	0.199	0.880
Purchase intentions	3	N/A	N/A	N/A	0.691	N/A
WOM	4	20.378(2)	10.189	0.991	0.134	0.973
Preventive health care behavior	6	88.649(9)	9.85	0.866	0.132	0.777
Socially responsible behavior	7	239.776(14)	17.127	0.915	0.178	0.873

Based on these criteria, several problematic items were flagged. First, for subjective attributes, the standardized residual covariance of ATT2 (5.162), ATT3 (2.914), and ATT9 (3.114) were significant high. Excessively high modification indices (MI=86.410) of ATT2 (Color) and ATT3 (Smell) indicated that the two items were cross-loaded. It is possible that these two attributes, color and smell, were perceived as similar features to respondents. ATT9 (Nutritional value) were cross-loaded with ATT8 (Healthy diet) (MI=101.409). A high correlation between these two items was not surprising because the two items are closely related to each other. Healthy diet is referred to as providing the body with essential nutrition (World Health Organization, 2014). That is, the meanings of these two terms were overlapping and so ATT9 was eliminated. ATT8 was not eliminated because ATT8 was not a problematic item.

For objective attributes, the standardized regression weight for ATT14 (0.3) were lower than the desired value. For purchase intentions, the standardized regression weight for PI1 (0.395) were also lower than the desired value. For altruistic values, VAL11 and VAL 12 had a high MI (45.805) because the two items were worded almost the same way (i.e., VAL11: “A world at peace”; VAL12: “A world of beauty”). For personal values, VAL13 (social recognition) and VAL14 (wisdom) also had a high MI (88.655). In many cases, the measurement scales for different values embrace many analogous terms, and these items are relevant to each other (Rokeach, 1973). Lastly, for preventive health care behavior, the standardized regression weight for PHB7 (0.388) was lower than 0.4, and PHB2 had a high standardized residual covariance (4.087). PHB2 also had a low standardized regression weight (0.463) and was cross-loaded with PHB3 (MI=33.851).

Based on the lack of face validity for several items discussed so far, the following eleven items were eliminated: three items for subjective attributes (ATT2, ATT3, ATT9), one item for objective attributes (ATT14), two items for personal values (VAL13, VAL14), two items for altruistic values (VAL11, VAL12), one item for purchase intentions (PI1), and two items for preventive health care behavior (PHB2, PHB7) (see Table 21).

Table 21: Each construct: Fit statistics (Improved Model)

Construct	Eliminated items	Number of items	χ^2 (df)	χ^2/df	CFI	RMSEA	TLI
Subjective attributes	ATT2, ATT3, ATT9	5	10.187 (5)	2.0337	0.995	0.045	0.989
Objective attributes	ATT14	8	436.111 (20)	21.806	0.822	0.202	0.751
Physical health	-	4	-	-	-	-	-
Mental health	-	4	-	-	-	-	-
Environment benefits	-	5	-	-	-	-	-
Personal values	VAL13, VAL14	7	166.601 (14)	11.900	0.962	0.146	0.942
Altruistic values	VAL11, VAL12	4	30.416 (2)	15.208	0.980	0.167	0.940
Purchase intentions	PI1	2	N/A	N/A	N/A	1.133	N/A
WOM	-	4					
Preventive health care behavior	PHB2, PHB7	4	45.160 (2)	22.58	0.896	0.206	0.688
Socially responsible behavior	-	7	-	-	-	-	-

MEASUREMENT MODEL

CFA was conducted for the measurement model that comprises all the latent constructs. As shown in a correlation matrix (Table 22), personal values and altruistic values were highly correlated ($\gamma = .925$). One way to solve this kind of problem is a second-order factor analysis. Although personal values and altruistic values were defined as distinct from each other in the initial development of this model, in terms of measurement, the distinction between these two values proved to be vague. As Rokeach (1973) has stated, depending on how different subsets of values are emphasized, value systems may change as values become belief. Rokeach's (1973) measurement scale of personal values is comprised of some items that reflect altruistic values such as "a world at peace" and "inner harmony." In this way, personal values are not only a person's own values, but also incorporate the perceived values of others. According to Krystallis, Vassallo, and Chryssohoidis (2012) who validated a measurement scale for the Portrait Value Questionnaire, "organic food purchasing is the combined outcome of mainly universalism, benevolence, stimulation, and hedonism" (p. 1458). Thus, it can be speculated that consumers of organic food perceive personal values and altruist values as one overarching value construct. On the basis of these theoretical and empirical considerations, a decision was made to treat personal values and altruistic values as a second-order construct in this study. The second-order construct is explained below.

Table 22: Correlation Matrix of Constructs

Construct	1	2	3	4	5	6	7	8	9	10	11
1. Subjective attributes	1.00										
2. Objective attributes	.785	1.00									
3. Physical health	.652	.593	1.00								
4. Mental health	.567	.370	.657	1.00							
5. Environment benefits	.654	.717	.754	.521	1.00						
6. Personal values	.365	.542	.623	.835	.502	1.00					
7. Altruistic values	.507	.706	.721	.743	.752	.925	1.00				
8. Purchase intention	.295	.511	.450	.471	.346	.499	.545	1.00			
9. WOM	.533	.617	.716	.516	.683	.537	.745	.510	1.00		
10. Preventive healthcare behavior	.433	.512	.533	.475	.517	.479	.510	.432	.395	1.00	
11. Socially responsible behavior	.422	.632	.509	.507	.571	.515	.519	.421	.538	.519	1.00

The model fit of the measurement model was assessed by the chi-square (χ^2) tests, the ratio of chi-square to degrees of freedom, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the room mean square error of approximation (RMSEA). The fit of the initial measurement model was: χ^2 (1322) = 4505.417, $=\chi^{2/}$df = 3.408, CFI = 0.877, TLI = 0.867, RMSEA = 0.069 (see Table 24).

SECOND-ORDER CFA

Two constructs were analyzed by means of a second-order factor analysis: objective attributes and values. For objective attributes, a first-order structure was not adequately supported by the literature, and so two sub-constructs were nested under objective attributes (Figure 8). In contrast, as explained above two different constructs, personal values and altruistic values, were integrated into a single higher order construct because of both theoretical and empirical considerations, as explained above (Figure 9).

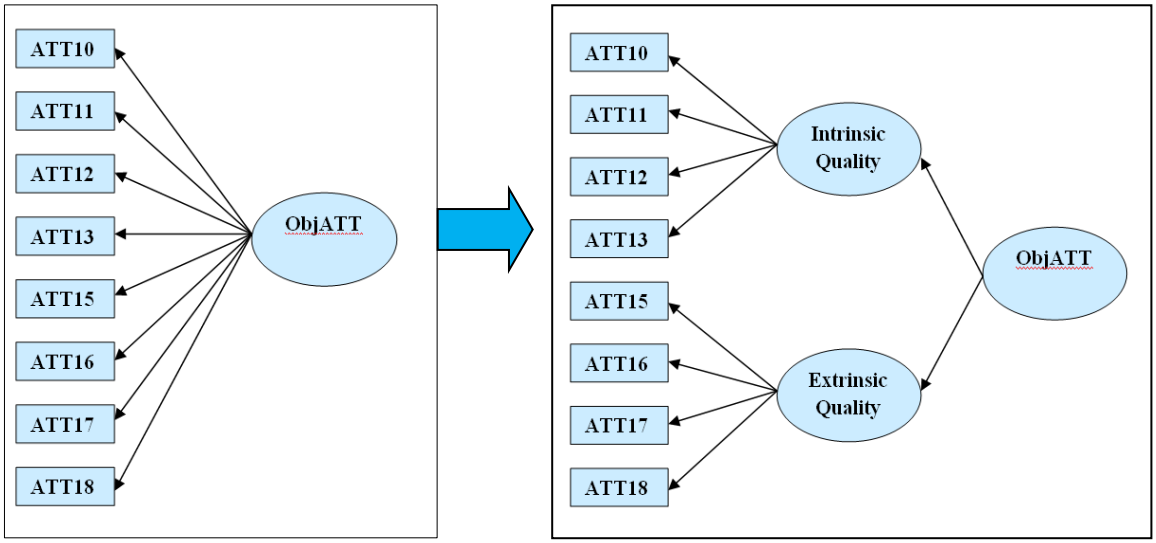

Figure 8. Initial First-Order Construct and Second-Order Construct for Objective Attributes

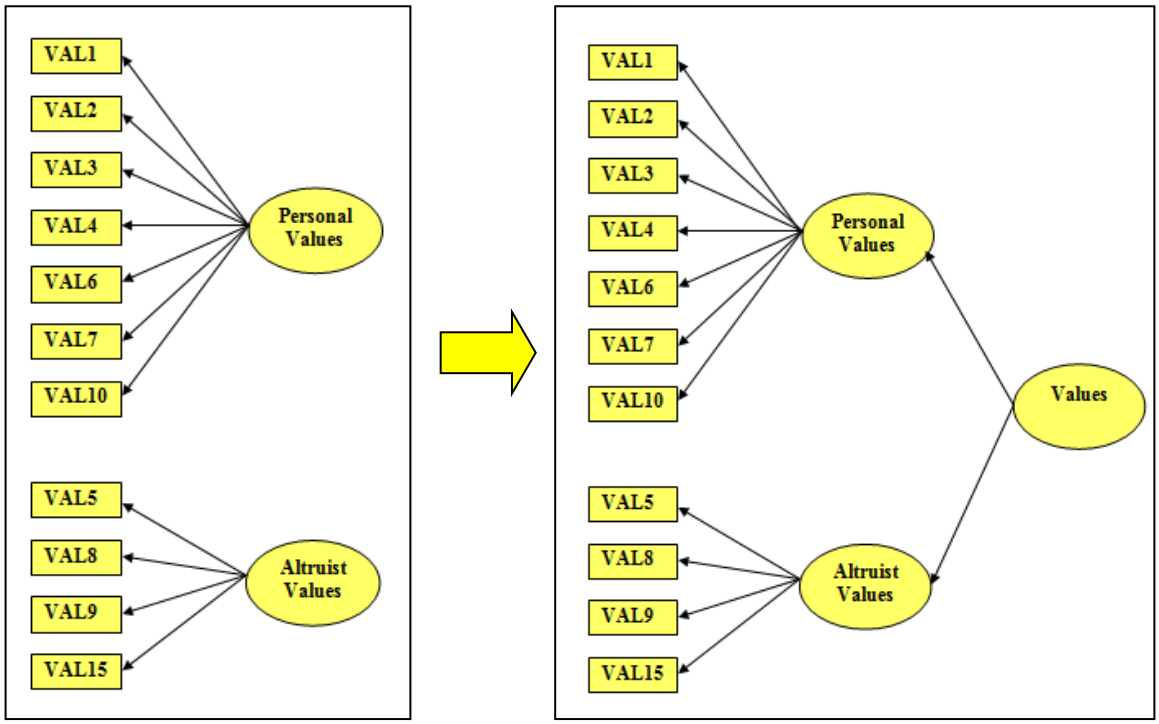

Figure 9. Initial First-Order Construct and Second-Order Construct for Values

Objective Attributes: Second-Order CFA

As explained in the literature, objective attributes can be perceived from two perspectives: as intrinsic and extrinsic qualities. With respect to the two sub-constructs of objective attributes (i.e., intrinsic qualities and extrinsic qualities), the scales for each construct were factor-analyzed first. Table 23 compares two ways of dealing with these qualities: treating them as two different constructs vs. integrating them into a single construct, providing an overview of construct reliability and standardized loading for each item. The correlation between the two sub-constructs was 0.69, which indicate that these two are not too highly correlated, but can be nested in one construct.

Table 23. Sub-Constructs of Objective Attributes: Two Constructs vs. One Construct

As two different constructs				
Construct	**Item**	**Standardized Loading**	**Standardized Error**	**Reliability**
Intrinsic quality	ATT10	0.77	-	0.89
	ATT11	0.90	0.052	
	ATT12	0.86	0.049	
	ATT13	0.77	0.053	
Extrinsic quality	ATT15	0.58	0.061	0.82
	ATT16	0.78	0.052	
	ATT17	0.80	0.047	
	ATT18	0.81	-	
Correlation: Intrinsic quality ⟷ extrinsic quality = 0.69				
As one construct				
Construct	**Item**	**Standardized Loading**	**Standardized Error**	**Reliability**
Objective attributes	ATT10	0.79	0.082	0.89
	ATT11	0.86	0.082	
	ATT12	0.82	0.077	
	ATT13	0.76	0.078	
	ATT15	0.54	0.094	
	ATT16	0.68	0.085	
	ATT17	0.64	0.081	
	ATT18	0.59	-	

Next, a CFA was conducted for the whole model, and the two cases were compared: one first-order factor (initial model) vs. second-order factor (higher-order) for objective attributes (see Table 24). When the second-order factor model was conducted, factor loadings and the fit statistics were significantly improved. Thus, using this second-order factor model to capture objective attributes results in a statistically improved model.

Table 24. Comparison between One First-Order Factor and Second-Order Factor

Initial Measurement Model			After Second-Order Factor		
Construct	**Item**	**Standardized Lading (*t*-value)**	**Construct**	**Item**	**Standardized Lading (*t*-value)**
Objective attributes	ATT10	0.78 (14.73***)	Intrinsic quality	ATT10	0.77 (20.94***)
	ATT11	0.83 (15.39***)		ATT11	0.90 (26.48***)
	ATT12	0.81 (15.02***)		ATT12	0.86 (-)
	ATT13	0.74 (14.11***)		ATT13	0.77 (20.70***)
	ATT15	0.56 (11.19***)	Extrinsic quality	ATT15	0.58 (13.17***)
	ATT16	0.71 (13.72***)		ATT16	0.79 (18.95***)
	ATT17	0.67 (13.02***)		ATT17	0.79 (19.03***)
	ATT18	0.63 (-)		ATT18	0.80 (-)
			ObjATT	Intrinsic quality	0.80
			ObjATT	Extrinsic quality	0.86
Fit Statistics			**Fit Statistics**		
χ^2(df)		4505.417 (1322)	**χ^2(df)**		4166.413 (1320)
χ^2/df		3.323	**χ^2/df**		3.156
CFI		0.877	**CFI**		0.890
TLI		0.867	**TLI**		0.881
RMSEA		0.069	**RMSEA**		0.065

Values: Second-Order CFA

With respect to the two sub-constructs of values (i.e., personal values and altruistic values), the scales for each construct were factor-analyzed first. Table 25 compares two ways of dealing with these values: treating them as two different constructs vs. integrating them into a single construct, providing an overview of construct reliability and standardized loading for each item. The correlation between the two sub-

constructs was 0.95, which indicate these two are highly correlated and can be nested in one construct.

Table 25. Sub-Constructs Values: Two Constructs vs. One Construct

As two different constructs				
Construct	**Item**	**Standardized Loading**	**Standard Error**	**Reliability**
Personal values	VAL1	0.89	0.033	0.96
	VAL2	0.89	0.032	
	VAL3	0.89	0.035	
	VAL4	0.93	0.032	
	VAL6	0.88	0.035	
	VAL7	0.84	0.035	
	VAL10	0.87	-	
Altruistic values	VAL5	0.82	0.069	0.87
	VAL8	0.84	0.068	
	VAL9	0.71	-	
	VAL15	0.79	0.085	
Correlation: Personal values ⟷ Altruistic values = 0.95				
As one construct				
Construct	**Item**	**Standardized Loading**	**Standard Error**	**Reliability**
Values	VAL1	0.88	0.054	0.96
	VAL2	0.89	0.051	
	VAL3	0.88	0.056	
	VAL4	0.93	0.053	
	VAL6	0.88	0.057	
	VAL7	0.84	0.054	
	VAL10	0.86	0.059	
	VAL5	0.79	-	
	VAL8	0.82	0.048	
	VAL9	0.65	0.049	
	VAL15	0.78	0.061	

Next, a CFA was conducted with the whole model, and the two cases were compared: first-order factor (two constructs separately) vs. second-order factor (two sub-constructs nested in one construct) for values (see Table 26). When the second-order factor model was conducted, factor loadings and the fit statistics were significantly improved. In this regard, the two first-order latent variables (i.e., personal values and altruistic values) can be specified as dimensions of a second-order latent variable (i.e. values). Thus, using this second-order factor model to capture these values results in a statistically improved model.

Table 26. Comparison between First-Order Factor and Second-Order Factor

Initial Measurement Model			**After Second-Order Factor**		
Construct	**Item**	**Standardized Lading (*t*-value)**	**Construct**	**Item**	**Standardized Lading (*t*-value)**
Personal values	VAL1	0.89 (-)	Personal values	VAL1	0.89 (-)
	VAL2	0.89 (30.929***)		VAL2	0.89 (30.978***)
	VAL3	0.89 (30.631***)		VAL3	0.89 (30.374***)
	VAL4	0.93 (34.289***)		VAL4	0.93 (34.121***)
	VAL6	0.88 (30.375***)		VAL6	0.88 (30.199***)
	VAL7	0.83 (26.632***)		VAL7	0.84 (26.495***)
	VAL10	0.87 (29.233***)		VAL10	0.87 (29.302***)
Altruistic values	VAL5	0.84 (-)	Altruistic values	VAL5	0.82 (-)
	VAL8	0.84 (24.145***)		VAL8	0.84 (22.728***)
	VAL9	0.74 (20.097***)		VAL9	0.71 (18.046***)
	VAL15	0.75 (20.414***)		VAL15	0.79 (20.720***)
			Values	Personal values	0.95
				Altruistic values	0.99
Fit Statistics			**Fit Statistics**		
χ^2(df)		4166.413(1320)	**χ^2(df)**		3769.880(1225)
χ^2/df		3.156	**χ^2/df**		3.077
CFI		0.890	**CFI**		0.897
TLI		0.881	**TLI**		0.888
RMSEA		0.065	**RMSEA**		0.064

Revised Research Hypotheses

Based on the result of merging two values as one construct, proposed research hypotheses are revised as follows:

H1: The perceived importance of subjective attributes of organic foods will lead to perceived benefits of improving (a) physical health and (b) mental health.

H2: The perceived importance of objective attributes of organic foods will lead to the perceived benefits of improving (a) physical health, (b) mental health and (c) the environment.

H3: The perceived benefits of physical health from consuming organic foods will lead to positive values.

H4: The perceived benefits of mental health from consuming organic foods will lead to positive values.

H5: The perceived benefits of improving the environment from consuming organic foods will lead to positive values.

H6: Values will lead to (a) purchase intentions and (b) positive WOM.

H7: Consumers' preventive health care behaviors will moderate the relationship between the perceived importance of subjective and objective attributes of organic foods and improving physical health and mental health.

With a higher level preventive health care behaviors, the perceived importance of subjective attributes of organic foods will have a stronger positive effect on improving (a) physical health and (b) mental health and the perceived importance of objective attributes of organic foods will have a stronger positive effect on improving (c) physical health and (d) mental health.

H8: Socially responsible behavior will moderate the relationship between the perceived importance of objective attributes of organic foods and improving the environment. With a higher level of socially responsible behavior, the perceived importance of objective attributes of organic foods will have a more positive effect on improving the environment.

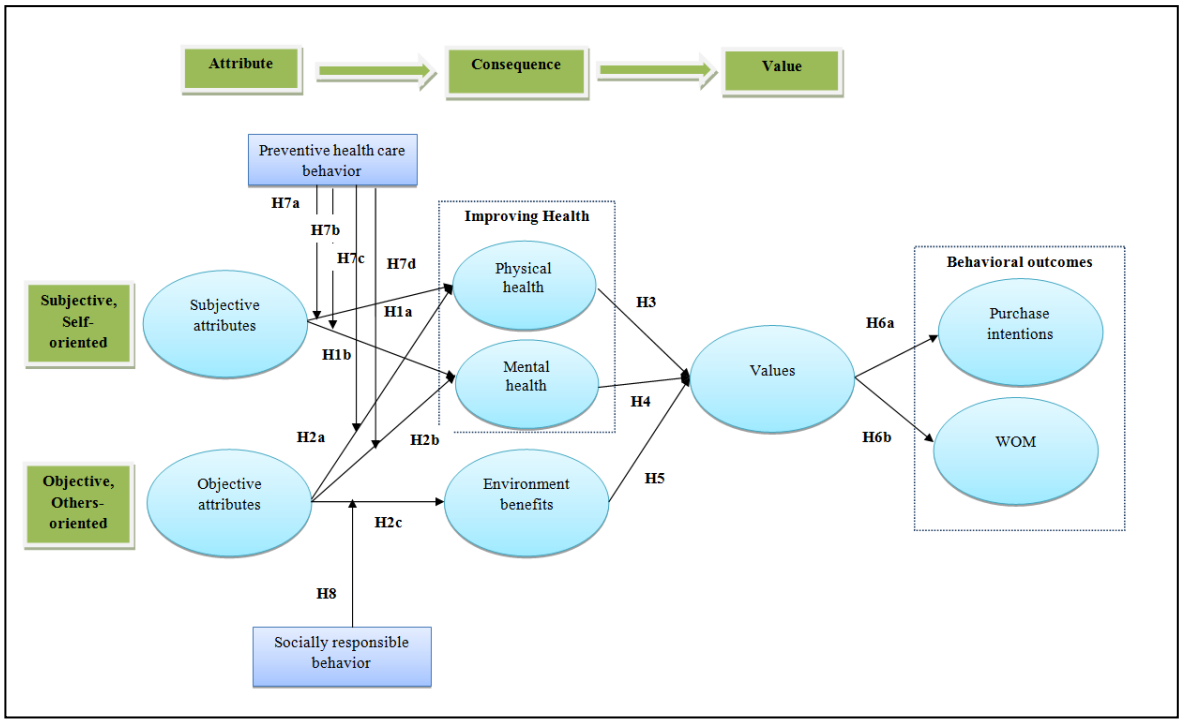

Figure 10. Final Research Model

Model Improvement

To improve the measurement model, all measurement items were examined in terms of standardized regression weights, standardized residual covariance, and modification indices. Seven items (i.e. ATT11, MTH1, IMP5, VAL7, VAL15, SR2, and SR3) were identified as having low standardized regression weights, high standardized residual covariance, and high modification indices. Thus, these seven items were eliminated from the measurement model. In addition, the parameters in the covariance modification indices were examined to determine whether the error variances were highly correlated. Four pairs of error variance showed high modification indices: VAL1 and VAL10 (MI=45.258), PHB5 and PHB6 (MI=34.881), ATT17 and ATT18 (MI=29.378),

and VAL3 and VAL4 (MI=20.873). After examining these highly correlated scale items, the researcher decided to correlate the four pairs of errors. The modifications to improve the measurement model are presented in Table 27.

The final measurement model was composed of 10 constructs measured by 67 observed variables. The factor loadings for all items ranged from 0.49 to 0.96, and all paths were significant ($p < 0.001$). The composite reliabilities of each construct ranged from 0.75 to 0.96, meeting the minimum criteria of 0.70 (Nunnally & Bernstein, 1994). The final measurement model provided an acceptable fit to the data: χ^2 (981) = 2703.362, $\chi^{2/}$df = 2.756, CFI = 0.921, TLI = 0.913, RMSEA = 0.059. The factor loadings, composite reliabilities, and fit statistics of the final measurement model are provided in Table 28.

Table 27. Modifications

Construct	Modification
Objective attributes (intrinsic)	• Dropped ATT11 (based on stand residual covariance and modification indices)
Objective attributes (extrinsic)	• Correlated error variances of ATT17 and ATT18
Mental health	• Dropped MTH1 (based on stand residual covariance and modification indices)
Environment benefits	• Dropped IMP5 (based on stand residual covariance and modification indices)
Values (personal values)	• Dropped VAL7 (based on stand residual covariance and modification indices) • Correlated error variances of VAL1 and VAL10 • Correlated error variances of VAL1 and VAL10
Values (altruistic values)	• Dropped VAL15 (based on stand residual covariance and modification indices)
Preventive health care behavior	• Correlated error variances of PHB5 and PHB6
Socially responsible behavior	• Dropped SR2 and SR3 (based on stand residual covariance and modification indices)

Table 28. Final Measurement Model: Factor Loadings and Fit Statistics

Construct	Scale Items	Factor Loading	t-value	Composite Reliability
Subjective attribute	**ATT1:** Texture/Tenderness	0.668	15.313***	0.887
	ATT4: Taste	0.726	17.192***	
	ATT5: Quality for price	0.649	15.105***	
	ATT6: Safety	0.809	-	
	ATT8: Healthy diet	0.856	17.487***	
Objective attribute	**ATT10:** Certified organic label	0.811	19.192***	0.960
	ATT12: No pesticides or herbicides	0.822	-	
Intrinsic	**ATT13:** Not using genetically modified ingredients	0.755	18.101***	
	ATT15: Country of production	0.609	12.812***	
	ATT16: Information about the production method	0.816	17.150***	
Extrinsic	**ATT17:** Fair trade practices	0.727	19.548***	
	ATT18: Packaged in recycled material	0.738	-	
Physical health	**PHH1:** Avoid health problems and issues	0.887	-	0.961
	PHH2: Stay healthy longer	0.905	31.112***	
	PHH3: Reduce the risk for illness	0.932	32.750***	
	PHH4: Reduce the risk for illness in my family health	0.863	27.742***	
Mental health	**MTH2:** Control my stress	0.935	30.521***	0.940
	MTH3: Relax	0.953	31.453***	
	MTH4: Increase my energy	0.858	-	
Environmental benefits	**IMP1:** Improve the state of the environment	0.794	-	0.909
	IMP2: Reduce the use of artificial fertilizers in agriculture.	0.928	25.328***	
	IMP3: Reduce the pollution of the soil.	0.919	24.900***	
	IMP4: Reduce the use of herbicides and pesticides in agriculture	0.920	24.836***	
Values	**VAL1:** A comfortable life	0.894	-	0.962
	VAL2: A sense of accomplishment	0.894	30.7888***	
Personal	**VAL3:** Family security	0.879	29.531***	
	VAL4: Happiness	0.925	33.527***	
	VAL6: Pleasure	0.876	29.488***	
	VAL10: An exciting life	0.859	34.514***	

Table 28. ***(Continued)***

Construct	Scale Items	Factor Loading	t-value	Composite Reliability
Altruistic	**VAL5:** Inner harmony (respecting the earth)	0.832	-	
	VAL8: Quality of life	0.856	23.193***	
	VAL9: Conservation of natural resources	0.713	18.195***	
Purchase intentions	**PI2:** I am willing to pay a price premium for organic foods.	0.949	23.322***	0.920
	PI3: I would consider purchasing organic foods, even if it is expensive.	0.896	-	
WOM	**WOM1:** I would mention to others that I buy organic food.	0.790	-	0.909
	WOM3: I would speak positively about organic food.	0.851	22.234***	
	WOM4: I would recommend eating organic foods to family members.	0.954	26.093***	
	WOM5: I would recommend eating organic foods to close personal friends.	0.958	26.572***	
Preventive health care behavior	**PHB1:** I eat a well-balanced diet.	0.785	9.760***	0.753
	PHB3: I exercise regularly.	0.512	8.221***	
	PHB5: I get enough rest and sleep.	0.492	10.602***	
	PHB6: I maintain a balance between "work" and "play."	0.561	-	
Socially responsible behavior	**SR1**: I avoid buying from companies that harm endangered plants or animals.	0.812	17.469***	0.908
	SR4: I avoid buying products that pollute the water.	0.866	18.508***	
	SR5: I make an effort to avoid products or services that cause environmental damage.	0.915	19.412***	
	SR6: I avoid buying products that are made from endangered animals.	0.762	16.519***	
	SR7: I limit my use of energy such as electricity or natural gas to reduce my impact on the environment.	0.706	-	

Fit Statistics	
χ^2(df)	2703.362(981)
χ^2/df	2.756
CFI	0.921
TLI	0.913
RMSEA	0.059

*** Significant at $p < 0.001$.

Construct Validity

The construct validities of the latent constructs were evaluated by both convergent and discriminant validity. Convergent validity is determined by demonstrating that the degree to which a measure is correlated with other measures as theoretically predicted. Convergent validity was supported by the following findings: (a) Factor loadings for all 67 items were significant ($p < 0.001$); (b) the composite reliability for each construct exceeding the recommended level of 0.70 (Table 28); (c) the average variance extracted (AVE) for all latent variables was greater than the recommended threshold value of 0.50 (ranging from 0.63 to 0.92) (Fornell & Larcker, 1981) (Table 29). Discriminant validity was tested by examining whether the AVE was larger than the shared variance (i.e., squared correlation coefficients) between all possible pairs of latent variables (Fornell & Larcker, 1981). In this study, all constructs are demonstrated as conceptually and theoretically different (Table 29).

Table 29. Construct Validity of the Final Measurement Model (AVE)

Construct	1	2	3	4	5	6	7	8	9	10
1. Subjective attribute	**0.75**									
2. Objective attribute	0.71	**0.79**								
3. Physical health	0.35	0.49	**0.91**							
4. Mental health	0.12	0.30	0.41	**0.92**						
5. Environment benefits	0.44	0.58	0.56	0.22	**0.82**					
6. Values	0.19	0.44	0.49	0.67	0.38	**0.86**				
7. Purchase intention	0.08	0.28	0.20	0.21	0.11	0.29	**0.92**			
8. WOM	0.28	0.44	0.52	0.25	0.46	0.26	0.44	**0.82**		
9. Preventive healthcare behavior	0.19	0.29	0.31	0.20	0.24	0.21	0.25	0.16	**0.63**	
10. Socially responsible behavior	0.20	0.46	0.27	0.23	0.35	0.18	0.32	0.31	0.27	**0.82**

Diagonal entries show the average variance extracted by the construct. Off-diagonal entries represent the variance shared (squared correlation) between constructs.

STRUCTURAL MODEL EVALUATION AND HYPOTHESES TESTS

The proposed research model and the hypothesized relationships among constructs were tested in the structural model. The fit indices of the structural model were: χ^2 (647) = 2234.981, $\chi^{2/}$df = 3.454, CFI = 0.916, TLI = 0.909, RMSEA = 0.069 (see Table 30).

Table 30. Structural Model: Hypothesis Testing and Fit Statistics

Hypothesis		Structural Path	Standardized Regression Weight	Standard Error	t-value	Result
H_1	H_{1a}	Subjective attributes → Physical health	-0.660	0.177	-4.825***	Supported
	H_{1b}	Subjective attributes → Mental health	-0.850	0.232	-5.744***	Supported
H_2	H_{2a}	Objective attributes → Physical health	1.413	0.220	9.758***	Supported
	H_{2b}	Objective attributes → Mental health	1.349	0.281	8.820***	Supported
	H_{2c}	Objective attributes → Environmental benefits	0.814	0.074	14.538***	Supported
H_3	H_3 (+)	Physical health → Values	0.196	0.063	3.962***	Supported
H_4	H_4 (+)	Mental health → Values	0.530	0.048	11.610***	Supported
H_5	H_5 (+)	Environmental benefits → Values	0.289	0.065	6.376***	Supported
H_6	H_{6a}	Values →Purchase intentions	0.905	0.047	11.234***	Supported
	H_{6b}	Values → WOM	1.004	0.040	14.681***	Supported

Fit Statistics	
χ^2(df)	2234.981(647)
χ^2/df	3.454
CFI	0.916
TLI	0.909
RMSEA	0.069

***p<0.001

H1: Subjective attributes → Health benefits

The perceived importance of subjective attributes of organic foods had a significant effect on both perceived benefits of physical health ($\beta = -0.660$, $p < 0.001$) and mental health ($\beta = -0.850$, $p < 0.001$). Thus, both H_{1a} and H_{1b} were supported.

H2: Objective attributes → Health and environmental benefits

The path weights of all sub-hypotheses of H2 were significant at $p < 0.001$. The perceived importance of objective attributes of organic foods had a significant effect on perceived benefits of physical health ($\beta = 1.413$, $p < 0.001$), mental health ($\beta = 1.349$, $p < 0.001$), and environment ($\beta = 0.814$, $p < 0.001$). Thus, H_{2a}, $H_{2b,}$ and H_{2C} were supported.

H3: Physical health benefits → Values

The relationship between values and the perceived benefits of physical health from consuming organic foods was significant ($\beta = 0.196$, $p < 0.001$), which supported H3.

H4: Mental health benefits → Values

The relationship between values and the perceived benefits of mental health from consuming organic foods was significant ($\beta = 0.530$, $p < 0.001$), which supported H4.

H5: Environmental benefits → Values

The relationship between values and the perceived benefits of improving the environment from consuming organic foods was significant ($\beta = 0.289$, $p < 0.001$), which supported H5.

H6: Values → Purchase intentions and WOM

H6 tests the influence of values on purchase intentions ($\beta = 0.905$, $p < 0.001$) and WOM ($\beta = 1.004$, $p < 0.001$). Both paths were significant. Thus, H_{6a} and H_{6b} were supported.

H7: Moderating effect of consumers' preventive health care behaviors on the relationship between perceived importance of subjective attributes of organic foods and improving (a) physical health and (b) mental health.

Moderating effect of consumers' preventive health care behaviors on the relationship between perceived importance of objective attributes of organic foods and improving (c) physical health and (d) mental health.

The moderating effect of preventive health care behavior was tested through multi-group analysis: splitting the sample into sub-groups according to whether respondents scored high or low on the measurement items of PHB (preventive health care behavior). The means score for respondents' PHB was 5.82. Thus, respondents who rated higher than 5.82 on PHB (N=279) were categorized into the "high" group, and respondents who rated lower than 5.82 on PHB (N=233) were categorized into the "low" group. Next, comparative analysis of each path between the two groups (i.e., high vs. low group) was conducted. The difference in chi-square values between the unconstrained

model (i.e., all paths were constrained to be equal except for the link between subjective attributes and physical health) and the constrained model (i.e., all paths were constrained to be equal across high- and low-PHB groups) determines whether PHB acts as a moderating variable. In this way, $H_{7b,}$ $H_{7c,}$ and H_{7d} could be tested as well. The chi-square difference test revealed that there was no significant difference between the two groups in the paths from subjective attributes to physical health ($\Delta\chi^2 = 0.765$, p = 0.382); from subjective attributes to mental health ($\Delta\chi^2 = 2.453$, p = 0.117); from objective attributes to physical health ($\Delta\chi^2 = 0.526$, p = 0.468); and from objective attributes to mental health ($\Delta\chi^2 = 3.162$, p = 0.075) (see Table 31). Thus, $H_{7a,}$ H_{7b} $H_{7c,}$ and H_{7d} hypothesizing the moderating effect of PHB on the relationships between attributes and health were not supported.

Table 31. Moderating Effects of Preventive Health Care Behavior (H7) and Socially Responsible Behavior (H8)

Hypothesis		Structural Path	Standardized Regression Weight		χ^2 difference (df=1)	Result
			High Group	Low Group		
H_7	H_{7a}	Subjective attributes → physical health	-0.803	-0.573	0.765	Not supported
	H_{7b}	Subjective attributes → mental health	-0.822	-0.823	2.453	Not supported
	H_{7c}	Objective attributes → physical health	1.452	1.279	0.526	Not supported
	H_{7d}	Objective attributes → mental health	1.312	1.228	3.162	Not supported
H_8		Objective attributes → environmental benefits	0.750	0.803	3.760	Not supported

* Significant at $p<0.05$, *** Significant at $p<0.001$

H8: Moderating effect of socially responsible behavior on the relationship between perceived importance of objective attributes of organic foods and improving the environment.

The moderating effect of socially responsible behavior was tested through multi-group analysis: splitting the sample into sub-groups according to whether respondents scored high or low on the measurement items of SR. The means score for respondents' SR was 5.44. Thus, respondents who rated higher than 5.44 on SR (N=280) were categorized into the "high" group and respondents who rated lower than 5.44 on SR (N=232) were categorized into the "low" group. Next, comparative analysis of each path between the two groups (i.e., high vs. low group) was conducted. The difference in chi-square values between the unconstrained model (i.e., all paths were constrained to be equal except for the link between objective attributes and environmental benefits) and the constrained model (i.e., all paths were constrained to be equal across high- and low-SR groups) determines whether SR acts as a moderating variable. The chi-square difference test revealed that there was no significant difference between the two groups in the paths from subjective attributes to physical health ($\Delta\chi^2 = 3.760$, $p = 0.052$) (see Table 30). Thus, H8 hypothesizing the moderating effect of SR on the relationships between objective attributes and environmental benefits was not supported.

SUMMARY

The chapter provided the data analyses and results of hypothesis testing that were introduced in Chapter II. In the first section, a descriptive analysis of respondents' organic food shopping behavior was presented. The second section provided the results of the preliminary analysis of the main data. The third section evaluated the measurement model using CFA including a second-order analysis. The measurement model provided an acceptable fit to the data: χ^2 (981) = 2703.362, $\chi^{2/}$df = 2.756, CFI = 0.921, TLI = 0.913, RMSEA = 0.059. The fourth section evaluated the structural model using SEM and tested the hypotheses. The fit indexes of the structural model were: χ^2 (647) = 2234.981, $\chi^{2/}$df = 3.454, CFI = 0.916, TLI = 0.909, RMSEA = 0.069. Overall, the results of the hypothesis testing were supported except for the moderating effect, H7 and H8, which were not supported.

CHAPTER V
DISCUSSION AND IMPLICATIONS

The current study has explored the phenomenon of organic food consumption and what organic foods mean to organic shoppers. Employing the hierarchical process of means-end theory (MET), the study examined how organic shoppers use organic foods to achieve certain ends. Two lines of inquiry have been pursued in this study: first, a qualitative investigation undertaken to explore whether MET is applicable in the context of organic food consumption, and second, a quantitative approach designed to test and validate a new research model (shown in Figure 10) that applies MET. This chapter discusses the relevance of these two lines of inquiry to the study's research questions and explores the study's theoretical and practical implications. It ends with the study's limitations and proposals for future research.

DISCUSSIONS OF FINDINGS

RESEARCH MODEL

The theoretical foundation for this study was the Means-End Theory developed by Gutman (1982). The MET is a knowledge structure that explains the relationships between consumers' cognitive networks and their consumption behavior. In the past, the MET has only been used to examine subjective attributes linked to self-relevant consequences of consumption and personal life values or goals. However, knowledge can take both subjective and objective forms (Montague, 1940). Thus, in applying Gutman's (1982) framework to the context of organic food consumption, this study also has

employed an objective, others-oriented perspective. The model developed for this study has broadened the application of MET by incorporating objective attributes linked to altruistic values and others-relevant consequences of consumption. It also has integrated the view (now generally accepted among marketing researchers) that the objective attributes of food should be analyzed in terms of both its intrinsic and extrinsic qualities (Jover et al., 2004).

The high correlation between personal values and altruistic values that was found in the evaluation of the measurement model reported in Chapter 4 suggests that these two constructs cannot be distinguished from one other. To solve this problem, a second-order factor analysis was used and the two first-order latent variables of personal values and altruistic values were redefined as dimensions of a second-order latent variable (i.e., values). Although the construct of altruistic values could not be validated by the initial research model, the final model was able to demonstrate that the single dimension of values played a significant role in organic shoppers' organic food consumption.

Overall, the proposed research model has been shown to capture the process of organic food consumption effectively. The results support the hypotheses associated with the three constructs (i.e., attributes, consequences, and values)--demonstrating relationships that are central to MET. The present research thus supports prior qualitative research that employed these three constructs (Barrena, 2012; Baker et al., 2004; Zagata, 2014). In an attempt to fill the gap between the traditional research framework of MET and the current market situation of organic food shopping, this study also investigated the relationships among attributes, consequences, values, and behavioral outcomes from both

a subjective, self-oriented perspective and an objective, others-oriented perspective. In doing so, it has demonstrated the usefulness of MET as a means of modeling the interactions among the constructs.

Effects of Attributes on Consequences

The study has shown that attributes are the lowest level component of the MET hierarchy for organic food consumption that leads to positive consequences (i.e., health and environmental benefits). This finding is consistent with previous qualitative studies (Costa et al., 2004; Boer & McCarth, 2003). However, it is interesting to note that the current study has also identified two distinct dimensions of attributes through a comprehensive literature review and an empirical validation. As noted above, previous studies using MET have long incorporated subjective attributes. However, in the context of food, there is general agreement that the overarching attribute of quality is comprised of both subjective qualities and objective qualities (Grunert, 2005). In keeping with this consensus view, two dimensions (i.e., subjective attributes and objective attributes) have been incorporated to examine the extent to which certain attributes of organic food correspond to positive consequences (i.e., health and environmental benefits). That is, consumers evaluate organic foods based on given information (objective attributes) as well as inferred beliefs (subjective attributes). Thus, Organic shoppers may consider product attributes not only by interpreting the attributes of organic foods based on their own knowledge but also by inferring product-related meanings that go beyond the information given. Therefore, subjective and objective attributes are intertwined, and

both attributes are important characteristics of organic foods that are sought by consumers. This study demonstrates that these attributes are means whereby consumers obtain desired-ends.

Effects of Consequences on Values

This study has addressed what consequences consumers associate with the consumption of organic foods (i.e., health and environmental benefits) and what kinds of values they associate with these consequences. The positive relationship found here between consequences and values is consistent with the findings of previous studies-- that health benefits are direct antecedents of personal values (Devlin et al., 2003; Manyiwa & Crawford, 2001), and that environmental benefits are direct antecedent of altruistic values (Ferran & Grunert, 2007; Stern, 2000). This study's construction of values as an overarching phenomenon integrating both personal and altruistic values is quite in accordance with previous studies, including Stern's (2000) study which suggested that both altruistic and personal values are a matter of worldview, and Rokeach's (1973) earlier demonstration that, depending on the subject and social context, the meaning of personal values can vary.

According to Hutchings (1972), values are closely associated with ends: "the notion of end usually means something which can be realized" (p. 291). End states reflect values, which define what organic shoppers want to pursue from their consumption. The findings of this research concerning the ends associated with organic food consumption (i.e., a comfortable life, a sense of accomplishment, family security, happiness, and

pleasure, an exciting life, inner harmony, quality of life, and conservation of natural resources) can be applied to future research on organic food. This is the first empirical study to integrate values into a model of organic food consumption, adopting the measurement scale that has been applied in a broad range of contexts (Rokeach, 1973). The current study's application of the well-established concept of values to a relatively new field of organic food consumption provides a basis for more quantitative research in this area.

Effects of Values on Behavioral Outcomes

The study has also provided evidence that the end-states values result in behavioral outcomes (i.e., WOM and purchase intentions). The MET demonstrates that consumers are goal-oriented decision-makers, who pursue desired outcomes. Although values are at an abstract level, they are important motivators for consumer behavior (Aertsens et al., 2009). This result is consistent with the findings of previous researchers (Honkanen et al., 2006; Michaelidou & Hassan, 2007) that a positive relationship exists between motivations of organic food purchase and behavioral intentions. The descriptive characteristics of the participants showed that they were willing to pay more for organic foods and were highly involved with buying organic foods. Their beliefs about organic food products (i.e., favorable beliefs) were different from non-organic shoppers (Thogersen, 2011). Such highly involved organic shoppers tend to have not only strong purchase intentions for themselves but also a desire to influence others to purchase organic foods through positive word-of-mouth.

Moderating Effects of Preventive Health Care Behavior and Socially Responsible Behavior

One interesting finding of this study was that preventive health care behavior and socially responsible behavior failed to affect the relationship between attributes and consequences. There was no difference between consumers who had high preventive health care behavior and consumers who had low preventive health care behavior in the relationship between subjective/objective attributes and health benefits. It can be speculated that although preventive health care behavior is associated with health benefits, this behavior does not influence consumers to realize more health benefits. For instance, consumers who routinely ignore the preventive health care behavior such as exercising regularly and getting sleep may still indulge in health benefits by carefully evaluating the attributes of organic foods. From a methodological standpoint, the original scale was developed in 1998, and many scale items were subjective (e.g., "See your dentist for regular checkups," "Take precautions against sexually transmitted disease), which may not be appropriate to measure preventive health care behavior in general. Jayanti and Burns (1998), who originally developed the scale, suggested that the structure of the preventive health care behavior should be re-designed to correspond to marketing programs. Therefore, future research needs to refine the scale of preventive health care behavior to reflect the evolving understanding of consumers' behaviors with respect to preventive health care.

Likewise, the role of socially responsible behavior as a catalysis of the relationship between objective attributes and environmental benefits is open to question. The findings indicated no difference between consumers who have high socially

responsible behavior and consumers who have low socially responsible behavior. However, socially responsible behavior seems to slightly affect the relationship between objective attributes and environmental benefits, according to the result of the chi-square difference test ($\Delta\chi^2 = 3.760$, $p = 0.052$), where p-value is slightly above 0.05. However, a limitation exists regarding grouping into high and low socially responsible behavior: the responses of all survey participants were highly skewed toward high socially responsible behavior (mean=5.44 on a 7-point scale). The mean split method, which was used in this study to ensure similar sample size for two groups, categorized consumers who rated less than 5.44 into a "Low" group. Other methods (e.g., categorizing consumers who rated "1," "2," and "3" into a "Low" group) may result in different conclusions.

IMPLICATIONS

THEORETICAL IMPLICATIONS

In the literature, the MET is generally understood in terms of consumers as individuals; that is, the MET concerns the relevance to oneself of consequences based on individually held values. However, the current research demonstrates that the MET can be applied from a broader perspective that embraces others-oriented consequences and values. The expanded perspective makes it possible to see relationships that would otherwise be obscure. For example, attributes were found to generate both self- and others-oriented consequences. This finding illuminates how both self- and others-oriented consequences lead to values that have both personal and altruistic dimensions. Apparently, the integration of altruistic and personal values is deeply rooted in organic

shoppers' lifestyles and deeply manifested in their motives for choosing organic foods. This insight should be applied to other contexts of study in order to validate the expanded MET.

The insights gained from this study about how organic shoppers buy food categories may also help researchers and marketers to better administer the non-food organic product market. Foods are not the only products that can power the U.S. organic industry. Non-food organic products (e.g., supplements, personal care, household products, pet food, and textile clothing) are also growing, at times faster than food categories (OTA, 2014), and may be just as important as food categories to organic shoppers. Organic food shoppers are more likely to buy non-food organic products, and they easily pay attention to these non-food categories (OTA, 2014). Understanding the MET for organic shoppers' food consumption can give researchers a starting point for understanding non-food organic consumption. In sum, the expanded MET can provide marketers with ideas not only for how to appeal to existing organic shoppers, but also how to recruit new segments (i.e., non-organic shoppers).

PRACTICAL IMPLICATIONS

The empirical findings have substantiated a direct link among attributes, consequences, and values. The significant relationships found in the study provide some useful insights for marketers. First, marketers need to single out which attributes of organic foods (i.e., subjective attributes or objective attributes) attract consumers the most. Different kinds of attributes may be important to different groups of consumers.

The qualitative portion of this study suggested that the ingredients of organic foods (i.e., intrinsic quality attributes) such as the lack of pesticides and genetically modified components are critical attributes to organic shoppers. This preference may be related to decreasing trust in the quality of conventional food. Marketers can emphasize the benefits of organic food compared to conventional food and convince the general population the benefits of a healthier lifestyle. In addition, when consumers act on a low level of the MET hierarchy (attributes), they may not think of their goals at the highest level. Although organic shoppers buy organic foods all the time, they may not explicitly link the benefits of consuming organic foods to the abstract level, values and goals. Emphasizing the values and goals relating to the benefits of organic foods in advertising campaigns may attract both established organic shoppers and newly emerging organic shoppers, adding new meanings to their consumption (e.g., organic foods help them attain life values).

Extrinsic quality attributes such as fair trade practices and packed in recycled material were influential attributes as well. This implies that ecological responsibility motivates organic shoppers. To approach these consumers' ecological motives, the societal marketing approach is useful. Societal marketing is a concept regarding the profitable production of goods and services that will satisfy consumers' needs and wants (Prothero, 1990). However, societal marketing involves planning that will profit both companies and society. When firms make societal marketing decisions, they consider both the short-term and long-term effects by not only meeting customers' needs and wants but also benefiting the society (Prothero, 1990; Takas, 1974). Since globalization,

natural disasters, and pollution have become salient issues, many companies are compelled to consider environmental effects as they pursue profits. For example, green consumers or organic shoppers want to buy ecologically friendly merchandise to decrease the environmental impact via responsible consumption (Prothero, 1990). Environmentally friendly behavior or green consumerism is a driving factor of the ethical consumer market, which includes organic shoppers (Honkanen et al., 2006; Michaelidou & Hassan, 2007). In order to target those organic shoppers, firms can design and promote societal marketing strategies.

Second, since values were shown in this study to affect consumers' behavioral outcomes especially WOM, evangelizing marketing may be an appropriate strategy in the organic foods market. The "customer evangelist" is a person who not only is loyal to the specific product, brand, or store but also feels compelled to tell others about the product or brand. The customer evangelist will discuss her/his own personal experiences and values and enthusiastically recruit new buyers (Matzler et al., 2007). Most of the organic shoppers who participated in the interviews for this study had characteristics similar to the customer evangelist profile. They convinced their family and friends to experience organic food and ultimately many of their family and friends became organic shoppers as well. Since organic shoppers pursue both personal health and environmental benefits, they are most likely to spread the word about health and environmental benefits. Consumers who are highly involved with organic food can become consumer evangelists through positive word-of-mouth, and convince the non-organic shoppers to purchase organic products (Matzler, et al., 2007). Therefore, appealing to these organic product

evangelists would be another strategy for marketers to convert non-organic shoppers to organic shoppers.

Third, regarding the demographic characteristics of the respondents (Table 8), 48.2% had children under 18, which is almost half the respondent. This result explains why the largest percentage of respondents was in either 31-40 (31%) or 41-50 (24.2%) age group. This mirrors today's trend that many countries in Europe are trying to implement organic food to school meals. Particularly, Finland and Italy have embedded systems, which are articulated, law-based, and nutrition and scientific management aligned for the content of the school meals (Nielsen et al., 2009). Researchers demonstrated the importance of food experience in childhood (Newman, Howlett, & Burton, 2014). Since the majority of the U.S. children is exposed to fast food and that yields fast food nostalgia when they were grown up, children's organic food experience should be considered. Therefore, implementing organic foods in the school meals can be considered in the U.S. as well. However, it should be acknowledged that there are many subjects to address such as legal issues, social issues, and price issues to the conditions and policies in the United States. However, in a long run, this change in the school food system will enhance the well-being of American children as well as reduce the parents' concerns for food safety for their children.

Fourth, marketers can use health claims for marketing communication campaigns. In general, organic shoppers seek for more information, and they want to be knowledgeable about how organic production is different from the conventional production systems (e.g., fertilizer, pesticides, etc.) (Cicia & Giudice, 2002; Zanoli &

Naspetti, 2002). Thus, these groups of organic shoppers are more receptive to information related to children and organic products. Mass media can be used to communicate with consumers via advertising in radio networks, newspapers, magazines, and Internet media to trigger or initiate consumers' perception of products. One of purposes of mass media is an advocacy in which "the strategic use of new media by those seeking to advance a social or public policy initiative" (Holder & Treno, 1997, p. 190). Media advocacy is especially designed to increase local attention to particular public health problems via local news (Holder & Treno, 1997). This will inspire consumers to attend to new information about health benefits of organic foods or food safety.

In fact, researchers have claimed that mass media can be used to promote health (Lefebve, 1988; Rogers, 1987; Wallack, 1993). Since concerns about the health aspects of foods have been rising among consumers, information about certain products related to consumer health in media can change their behaviors. For example, in Dodd and Morse's (1994) study, they used CBS 60 minutes program that provided information on the benefits of red wine based on scientific studies. After consumers watched the program, red wine sales have increased. This aspect of mass media applies in business, and marketers use advertising to reinforce growing demand or to impede decreasing demand. Other researchers (Burton & Young, 1996; Verbeke & Viaene, 1999; Verbeke & Holland, 2002) found that television messages about negative meat safety (i.e., hormone abuse, the incidence of BSE, etc.) decrease meat consumption. This reflects the importance of using advertising medium, especially television that is the most frequently used media by U.S. companies for fast food advertising because of high profit margins

(Newman et al., 2014). In this role, actively using the mass media may boost the U.S. organic food market and influence non-organic shoppers to consider health issues and encourage consuming organic foods.

Fifth, this study provided a new insight on what has been traditionally considered a major obstacle to the expansion of organic food consumption. Since the production of organic goods requires much more labor than conventional production, the price is generally higher (Gil, Gracia, & Sanchez, 2000). However, regarding the high price of organic food, most of the consumers interviewed and participated in the survey for this study were willing to pay a premium price for organic food (as shown in Table 16, only 4.3% were not willing to pay more). This finding is consistent with the recent OTA *U.S. Families' Organic Attitudes & Beliefs 2014 Tracking Study*, which found that parents recognize the benefits of organic foods and are willing to pay more because they want to give their families the highest quality and most healthy products being offered in their local store. The study emphasized that the price premium is no longer a barrier to buying organic foods. Today, in fact, the strongest barriers are availability and accessibility, as confirmed by the interviews with organic shoppers in this study. Many of those consumers noted the lack of availability of organic products. This may be a problem not only in Knoxville, TN, but also other regions of the U.S., especially small towns. Therefore, easy access organic products—not price—is a major challenge for retailers and marketers. One alternative could be to offer organic food via online shopping. For example, natural food retailer chains such as Whole Foods might profit from establishing online organic markets for consumers in the U.S. online shopping for organic products

could boost the supply and demand volume, which ultimately lowers prices and motivates other retailers to carry more organic products.

Lastly, marketers should consider the visibility and accessibility of organic products in the retail stores. If consumers do not easily see organic food, they are unlikely to choose organic food. Thus, it is important to ensure consistent availability of organic food in retail stores with clear layout and displays (e.g., shelf positions, stocking fresh produce without spoilt products, and clear labelling). Recently, more organic and natural food supermarket chains such as Whole Food Market and Earth Fare have emerged due to rising demand for organic products. Meanwhile, the largest U.S. grocers such as Wal-Mart and Kroger have increasingly offered organic products and even established organic food sections. This broader access is likely to attract both regular and occasional organic shoppers. Many occasional organic shoppers try products out of curiosity. Consumers, especially those who have a penchant for new and different experiences, may want to experiment with organic products. Easy access to a variety of organic products in stores should have a positive impact on sales.

LIMITATIONS AND FUTURE RESEARCH

The findings of this research should be interpreted with caution as all research suffers from inherent shortcomings. First, the participants of this study were not representative of the general public. The majority of these participants were regular organic shoppers: 72.5% had been purchasing organic foods more than 4 years; 37.5%, more than 10 years. Thus, the findings of this study may not be applicable to ordinary

consumers. Second, the qualitative research was conducted regionally, and therefore may not be applicable throughout the United States. The fifteen participants in the qualitative interviews were all recruited in Knoxville, TN. Higher numbers of interviewees from diverse regions would provide a richer description of organic shopping behavior. Third, the decision made in this study to separate the single measure of "attributes" into two separate measures of "subjective" and "objective" attributes needs to be validated. Although these two attributes were defined based on both a review of the literature and the findings of the qualitative research, more work (e.g., an empirical test) is needed to further verify the validity of the scales. Lastly, this study used a cross-sectional design, which involved data collection at one specific point in time. Perhaps the use of longitudinal or experimental data would be desirable, especially for structural equation modeling for performing advanced causal relationships among variables.

As discussed above, the marketing literature on organic products is sparse at best. Little empirical work has been done, and what has been done to date has lacked a sound theoretical frame. This research attempted to fill this gap by employing the theoretical frame of MET to examine the factors explaining the consumption of organic foods. Based on the MET model created for this study, the next logical step would be to extend its application and to test these findings across different contexts using more diverse consumer types. In addition, given that this study has suggested that retailers offer online shopping for organic products, it would be helpful for future researchers to extend the application of the MET to the context of online organic product shopping.

CONCLUSIONS

The goal of this research has been to explore the phenomenon of organic food consumption. This study contributes to our understanding of the motives behind organic food consumption by identifying the roles of attributes, consequences, and values in predicting behavioral outcomes. This study tests a new model for explaining the relationships among those major components (i.e., attributes, consequences, values, and behavioral outcomes). The findings demonstrate that the MET is an appropriate theoretical framework for quantitative studies and expands MET by employing an objective, others-oriented perspective as well as subjective, self-oriented perspective. It is hoped that the current study will motivate future researchers to further investigate organic food consumption and assist organic food producers and retailers with practical information as they strive to develop the organic food market.

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APPENDICES

APPENDIX A

Interview Guide

Introduction

Thank you for agreeing to meet with me today. As we briefly discussed on the phone and through email, I am currently researching the organic shoppers. Specifically, I am interested in organic shoppers' perceptions about organic foods and what motivate to purchase organic foods such as personal values and family issues. This is intended to be a very open-ended conversation.

Discussion of process

- Data collection (obtain informed consent to record interview)
- Data analyses
- Data storage and destruction
- Confidentiality
- Right to end interview at any time
- Summary report as an incentive to them

Introduction

I want you to feel comfortable. I consider you the expert. There are not any right or wrong answers. I am simply interested in your ideas, perceptions and opinions. I merely want to have an open discussion about organic foods and your experiences specifically.

- Let's begin by you telling me a little about yourself. How long have you been buying organic foods and where do you usually shop for organic foods?

General Questions

Uncover views on:

- What organic foods mean to them
- Motivations of choosing organic foods
- How it fits into every day experiences and special experiences
- What organic food items they purchase most and least
- What aspects they like/dislike shopping at the organic and natural food supermarket
- What this organic and natural food supermarket mean to them

Specific Experiences and Social Processes

Get at specific, lived experiences with any of the above, preferably recent experiences. Focus the conversation on the nature of the experience and the processes involved. By processes, focus on shopping as well as social processes. Try to discover:

- The problems the participant is trying to solve (family issues, personal issues)
- The processes they go through when shopping for organic products
- Ways they engage other organic shoppers or clerks in the store
- Tools they use to learn about organic products and processes
- Marketing initiatives they find useful and not

Probes

Remember to constantly probe for details using non-verbal active listening cues as well as words like “tell me more about that,” “what did that mean to you?” and “please go on.”

Wrap-up

Thank you very much for sharing your insights today. I know I learned a lot from our conversation. I will be conducting this research over the year and will provide you with a summary of the findings at the end of the year if you wish. If any other thoughts come to mind, you may contact me at the address on the business card.

APPENDIX B

Examples of Transcripts

Two Examples of Transcripts Organized by Categories

Freshness

Lin: I just don't like the canned products, I don't like canned tomatoes. When we make a salad I want everything to come fresh out of the ground, most of the time I grow my own food. So, if I can't grow it, I go to the store and I buy something, I want it to look as good as what I would grow in my own backyard and that's what makes me, I want food to look perfect….. what I bought at Kroger were the items that looked really fresh, the avocados were really fresh they weren't soft. The tomatoes were really fresh and they looked really good, that's what attracts me always is freshness.

Taste

Lin: I don't feel like processed foods taste as good, I feel like processed foods taste like they've been beat to death and they just don't have that, they're boring to us. I took my granddaughter to a restaurant once and she said oh spaghetti they have spaghetti and she loves Italian food so she said I want the spaghetti and she got it and she said there's something wrong with this, and she kept poking it. She said there's something wrong with the sauce, and I said what's wrong with it does it taste strange? So my husband tasted it and I says is there something wrong with is and he said no it's just boring sauce, it didn't have any tomatoes….we just feel that processed foods are so boring.

Nate: I've been growing a garden for 4 years now and I've been expanding each year to the point where I can't handle it anymore, it's almost too much to handle you know can and freeze all that stuff I mean when you work it's just impossible but the taste when we had good years like tomatoes and the taste of the produce is unbelievable compared to when you go to Kroger, or even organic stuff from Earth Fare that adds nothing to it. It grows slowly in good soil, I don't put anything on it, it's just fantastic.

Appearance

Nate: Like apples there's no way you can get an apple without a little spot in it because a little worm got in it or something. I mean or just because, and I do it sometimes like if the shape looks a little bit funny I'm not gonna take this one, it's crazy. I think there is a lot of things to kind of re-train people as to what is a good product instead of the image of it, the outer shape sometimes I think about that, and I say it's crazy but I do it sometimes so….. it doesn't have to be pretty it just has to be grown naturally, no pesticides, no stuff if it has a crooked shape it's okay.

Ingredients (e.g., no pesticides, not genetically modified)

Lin: To me an organic product means that it hasn't been raised in an area where any pesticides have been used and that there is no genetically modified processes going on with the food that the animals are fed or with the animals themselves and also all natural foods, even though I know that this isn't what organic means on the labels to me that's what I would like for organic to eventually mean.

Lin: The real definition of organic just I believe it means that there has been no herbicides or pesticides used on that particular food item. I think it's a very general definition.

Lin: I don't want to eat something, and I certainly don't want to feed something to my granddaughter that has ingredients in it that I cannot pronounce, I do not know what they are, when I teach classes to children I tell them if you look at a label and you can't even pronounce the name of what's in it you probably shouldn't put that in your mouth. I tell them would you go out in your backyard and put dirt in your mouth? And they say eww no, and I say but you're putting a lot of things in your mouth that you don't even know what they are.

Nate: I feel like the industrial age caused everybody to feel like the foods that are the best foods are the ones that have had something done to them, but I think we're all beginning to realize that's not really true.

Nate: I think it's important for your body, not to eat bad produce, too much processed food. They put stuff in there that is there just for the sake of long shelf life but it's not there for the quality of the produce it's just there to make it stay on the shelf that's all, which is understandable I mean you don't want to have something you have to change everyday. But for me it's not a sign of quality, I'm really away from organic now just food in general.

Nate: I think organic would be just the fact that I think there is no harmful product in it that won't get into my body and contaminate me and give me all kinds of crazy stuff.

Nate: what I like about organic is that it gives consumers a choice to buy foods that aren't genetically modified if that's what organic ends up meaning, you know it gives us an option to pick better foods for ourselves.

Safety

Lin: I have to eat rice noodles, I can't eat anything with wheat in it and they don't even have those at Kroger. Earth Fair has everything and they understand what I'm looking for and I don't have to be fearful that I'll buy something that will make me sick.

Lin: …I find that quite often I end up eating something that has ingredients in it that makes me really sick..

Nate : .....if you let something grow and don't touch it, and don't put any pesticides, if you don't apply things that are chemically engineered by some company to make it grow faster or avoid that some bugs go on it. All those products are harmful I mean it kills them, the bugs and stuff they die so that means it's pretty toxic and in a way I'm sure it gets in the plant in some way or there is no way around it, so natural in my mind if it's organic.

Enjoyment of foods

Lin: When I sit down and I eat some of the pear butter or some of the soup or some of the salsa and the things that we like to make part of the enjoyment I get from eating is remembering that I picked it and it was still warm from the sun and I cut it up and I put it in there. And so that's some of the joy of feeding my granddaughter the food, I know that it was really fresh and I want that to be part of our everyday experience.

More cooking

Lin: if we have a day where we're so busy we don't have time to make dinner together we both feel really sad from that, and so for us to go out to eat is not a really big treat. For us a really big treat is to have enough time at home where we can make something together.

Production methods

Lin: .. buying organic food to me means that the person who grew it and the person who brought it to market did it in the same way, with the same values that I have and that's why organic is important to me.

Health knowledge

Lin: … I started reading about how it's not necessary for everything to be organic, that was the thought at the time period. And so it said you wanted to eat stuff that, for instance is directly in contact with the soil or that doesn't have a protective peel on it, those are better to eat organic because that way the pesticide isn't in contact with it, or those can be most affected by pesticide I should say. Things like oranges and stuff, I had originally read that it may not be such a big deal, but now I guess there is even kind of a question about that because whether or not the oranges can take up the pesticides from the soil so

Lin: I think part of eating healthy is about awareness and I think most people eat for convenience because they need to, they're just to aware that there are healthier ways to

eat.

Nutritional value

Lin: when I look on the bread aisle I see that most of the bread aisle is not that type of bread, most of it is real soft bread that's already sliced and it has a lot of ingredients in it that I don't recognize and a lot of fat, very high fat content in those, a lot of sugars in those breads and I think those are the breads that most people buy so we think of that as regular bread.

Healthy diet

Nate: I started having cholesterol which is, I was borderline which is due to my love of the French food especially cheese which is very fattening, dry meat products like dry ham or cured ham, dry sausage and all those good stuff duck liver all that stuff I think is wonderful but I think with age I started, I've always been borderline maybe it comes from my mom borderline cholesterol but on top of that I have a little bit of high blood pressure so I had to restrict my diet pretty drastically and I reduced my cholesterol, I stopped meat and all the fat products, I stopped eating the yolk of the eggs because it's full of cholesterol. I went from 2% milk to skimmed milk, no more meat in general, fat free yogurts, even some, like I eat some of those Newman's Own fig cookies and it's no fat, so now I buy all that stuff

Lin: I just feel like eating healthy is such a big part of that, so I think that plays into as much as the disease, wanting to pass along good values to her is probably the next thing that's most important in my change in diet.

Quality for price

Nate: I'm different from a lot of people in this because for me food is something that's very important and if I had to choose between spending my money on a high priced food item that was good versus going shopping I would choose the high price food item because to me I think that's very important.

Nate: I would rather pay more and get something that grows slowly and naturally.

Nate: I know it's more expensive but I have the chance to have enough money that I don't have to, even though a lot of people have more money than I do but they would put a budget on food for instance which I don't. For me it's food first and then if I have money for the rest that's one of the priorities.

Accessibility (less-known)

Nate: I don't always get to buy organic, you know here it's not possible as much as I would like to be able to buy everything organic I can't afford to buy everything organic

even though I don't mind paying extra for organic but also I know that sometimes when I'm buying organic it doesn't necessarily mean that I'm getting the type of product that I would like to get.

Lin: My granddaughter is lactose free so I have to buy special milk for her and I have to eat gluten free so I have to buy all sorts of special foods and I cannot get them here in Maryville so I drive to Knoxville and I go to Earth Fair to get all these special things.

Certified organic label

Nate: Well I look at, mostly it's going to say organic somewhere on it and then you'll have the label USDA organic on it probably. All those signs for the produce the product code starts with a 9 for instance when it's organic so you can quickly pick up what's what. Yeah so that's how you know it's organic and you're gonna pick it. I tend to automatically if I have a choice I'm gonna pick the organic one

Nate: …..you know anything that you can put an organic stamp on it I guess I'll buy it.

Packaging

Lin: I like seeing that people are starting to think in more balanced ways about the packaging and how they process things, you know I think 10 years ago it just didn't matter to anybody if the factory where you buy your beans for instance used an extraordinary amount of energy in order to package those beans, but now people are thinking more in terms of holistic healthy ways of using energy and using packaging and I like it now because I think it's more in keeping with my thought process about those things, I feel like 10 years ago I wasn't worried about.

Nate: I feel like every single aspect of my life when it's out of balance it feels wrong, it feels wrong to me and so it's not just about food, it's also about I don't want to buy items that have a lot of extra packaging that are gonna be put into a landfill, I want to make the choices when I'm buying to be healthy choices not just for myself and my family but for my community and you know for the world to not buy things that are frivolously full of excessive packaging. The laundry soap we buy it's a refill package instead of buying one with the whole bottle each time you know.

Fair trade

Nate: I always suspect that the companies want to make a lot of money and they take advantage of cheap labor and that's I think it's bad. It goes on sometimes in Asia in general and I'm completely against it. I'm against companies in West that do that just for the sake of saving money, because it's decent money in Asia then they should pay them as much as they pay people here….. For those things I try to collect water, I try to recycle, compost all that stuff. I want to minimize my footprint. It's not a big effort, I

mean that's pretty easy stuff, we're not asking to wash with cold water and all these things, but it's pretty easy steps.

Recycling

Nate: …..since we have a house we have been composting everything you know, since we have the house and sometimes we come back to France and I tell them look at all the stuff you put in the trash that you could just put outside and it would decompose and even if you don't use it that's okay.

Physical Health

Lin: I read ingredients on everything because I have celiac disease and if I eat the wrong thing I would be very, very sick and so if I don't read the ingredients on everything I might buy a product and then have to throw it in the trash and that goes outside of my ideas about balance and living a balanced life, I can't stand to buy something and then throw it away, so I'm always real careful to make sure it's something that we won't get sick from.

Lin: It's a disease of the stomach I cannot eat wheat, oat, barley or rye. If I eat anything with that stuff in it makes me really sick…..most of my friends that have celiac disease are as determined as I am to eat in a healthy way.

Lin: since she can't have milk I have to buy special cheeses for her which are made out of soy and so each time I do big shopping I buy Provolone soy cheese and Cheddar soy cheese for her, and I buy about 4 or 5 different kinds of soy yogurt, she loves yogurt, to her that's like eating ice cream for dessert, she thinks that's wonderful, so I buy a whole lot of it when I do big shopping, and I buy regular yogurt for myself.

Lin: it's really important to me now to eat and live in a healthy way. When I was raising my daughter before I didn't think about these things as much as I do not. So I try really hard to convey that love of living in a natural and healthy and balanced way to my granddaughter so that she will grow up internalizing these concepts.

Nate: I want to make this the base of my diet you know because I'm thinking that if the produce is not touched as least as possible it's as best as you can get, so it's probably better for your health in general and the taste also probably, all those things flavor.

Nate: If the produce was grown with care and don't put all kinds of crap on it, the I assume that it's good for my health, I can eat it and it's going to be beneficial just because of all the good stuff naturally present in the produce and that there is nothing harmful in it that is foreign. I think it's eating right, eating good stuff is very important.

Environmental benefits

Nate: I didn't use everything organic but that's when I became aware and I really started to change my diet to be healthier not only for me but for the environment.

Nate: For me healthy doesn't just mean a healthy food product for me, it means a healthy food product for the environment as well, that's very important to me and that's where I think the organic label is severely lacking because it's not necessarily, organic doesn't mean that the food is healthy for the environment

Inner harmony

Lin: I didn't have very much awareness about healthy eating and how it affected my body. But my granddaughter is golden to me and I really want to know that she has been taught the right ways to eat and the right ways to live in a balanced and harmonious way with the earth and with her own community.

Wisdom

Lin: I want her to learn how to make good choices, we buy a lot of our food at Farmer's Market and so when I take her to Farmer's Market she can see that 5 different people have green beans and they're pretty much the same, but I want her to know what it means to buy the right green beans, so we discuss that to each other. I tell her if they are wrinkly looking or if they have little spots on them or something, we don't want to put them in the soup that we're gonna put in our freezer because we want that soup to be really fresh, and so I have her walk around with me and often I don't want to make the choice for her, she has her own little bag and she puts it on her arm and I let her choose and put it inside the bag, I let her pay for it, it makes her feel engaged in the whole process of doing these things. (wisdom, a sense of accomplishment, pleasure)

Variety seeking

Lin: I think our favorite is, well we have two favorites, the produce department, we always look in the produce department to try to find something we've never tried. We say oh that's weird looking and we say what is this? If it doesn't have a sign we'll go find somebody and ask them what is this, what are you supposed to with this? We bought one last week that looked like a blow fish I don't know what, I can't remember the name of it now but it was some crazy fruit and you cut it open it has all these wild looking seeds inside it, so my granddaughter and I we like to go pick something that we don't know about and we like to try new things a lot. And sometimes we buy it and we say, that's really yuk and we have to throw it out but most of the time we like to try new recipes and so we enjoy the produce department the best. Secondly we like the international aisle because of the same reasons, we find things on that aisle that we have never tried before and so it's fun to us to buy an ingredient that we don't know about, I

go home, look it up on the internet and try to make a recipe that we've never had before. Our favorite part of shopping is finding new things that we don't know about.

Life balance

Lin: I just like to try to think of living in a balanced way and that influences all my decisions not just my shopping decisions.

Lin: I read an article that said certain brands are harvested in a way that's really damaging to the environment, but there are other kinds that are less damaging and I thought well that goes in line with my thoughts about living in a balanced way, and so I would almost always try to buy the product that would be a more thoughtful product than to buy a product that is heavy on manufacturing and doing things in a damaging way.

Lin: I notice a lot of ladies carry their own grocery bags now and you didn't used to see that so much. It makes me feel good when I'm shopping to know that other people are investing in those values the same as we are.

APPENDIX C

A Sample Questionnaire (Pre-Test)

The University of Tennessee

Dear participant,

Thank you for your participation in this survey. The survey will take about 10 minutes to complete. Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty or loss of benefits to which you are otherwise entitled. If you wish to withdraw from the survey before data collection is completed, your data will be destroyed. Return of the completed survey or questionnaire constitutes your consent to participate. All responses will be held in confidence.

If you have questions at any time about the study or the procedures, you may contact the researcher, Yun-Hee Kim, at 1215 W Cumberland Ave, 233C Jessie Harris Building, University of Tennessee, or 865-360-5338. If you have any questions about your rights as a participant, contact the Research Compliance Services section of the Office of Research at (865) 974-3466.

Thank you.

Yun-Hee Kim
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Retail and Consumer Sciences
The University of Tennessee, Knoxville

Youn-Kyung Kim, Ph.D.
Professor
Retail and Consumer Sciences
The University of Tennessee, Knoxville

Following question is about your involvement with **health and environment**. Please rate how much you agree or disagree with the following statements.

	Strongly Disagree						*Strongly Agree*
I usually make an attempt to eat a well-balanced diet.	1	2	3	4	5	6	7
I usually make an attempt to exercise regularly.	1	2	3	4	5	6	7
In the long run, people who take care of themselves stay healthy.	1	2	3	4	5	6	7
People's ill health results from their own carelessness.	1	2	3	4	5	6	7
In general, I can do things that make me healthy.	1	2	3	4	5	6	7

I worry that there are harmful chemicals in my food.	1	2	3	4	5	6	7
I am concerned about my drinking water quality.	1	2	3	4	5	6	7
I usually read the ingredients on food labels.	1	2	3	4	5	6	7
I read more health-related articles than I did 3 years ago.	1	2	3	4	5	6	7
I am interested in information about my health.	1	2	3	4	5	6	7
I am concerned about my health all the time.	1	2	3	4	5	6	7

I avoid buying from companies that harm endangered plants or animals.	1	2	3	4	5	6	7
Whenever possible, I walk, ride a bike, car pool, or use public transportation to help reduce air pollution.	1	2	3	4	5	6	7
I avoid using products that pollute the air.	1	2	3	4	5	6	7
I avoid buying products that pollute the water.	1	2	3	4	5	6	7
I make an effort to avoid products or services that cause environmental damage.	1	2	3	4	5	6	7
I avoid buying products that are made from endangered animals.	1	2	3	4	5	6	7
I limit my use of energy such as electricity or natural gas to reduce my impact on the environment.	1	2	3	4	5	6	7

How often do you buy these organic foods? Please check in box for each category of food.

Organic Food Category	Never 1	Almost Never 2	Sometimes 3	Fairly Often 4	Very Often 5	Almost Always 6
Bread & Grains (e.g., rice and oats)						
Beverages						
Dairy (e.g., yogurt and milk)						
Fruits & Vegetables						
Frozen meals						
Meat, Poultry, & Eggs						
Sauces						
Snack Foods						

When you buy organic foods, how important is each of the following attributes?

	Not important						*Important*
Texture/Tenderness	1	2	3	4	5	6	7
Color/Aroma	1	2	3	4	5	6	7
Smell/Flavor	1	2	3	4	5	6	7
Taste	1	2	3	4	5	6	7
Value: Quality for price	1	2	3	4	5	6	7
Safety	1	2	3	4	5	6	7
Freshness	1	2	3	4	5	6	7
Healthy diet	1	2	3	4	5	6	7
Vegetarian diet	1	2	3	4	5	6	7
Nutritional value	1	2	3	4	5	6	7

Brand name	1	2	3	4	5	6	7
Country of production	1	2	3	4	5	6	7
Certified organic label	1	2	3	4	5	6	7
Information about the production method	1	2	3	4	5	6	7
No additives or residues from fertilizers	1	2	3	4	5	6	7
No pesticides or herbicides	1	2	3	4	5	6	7
Fair trade practices	1	2	3	4	5	6	7
Packaged in recycled material	1	2	3	4	5	6	7
Not using genetically modified ingredients	1	2	3	4	5	6	7

Buying organic foods will help me to …

	Strongly Disagree						*Strongly Agree*
Avoid health problems and issues.	1	2	3	4	5	6	7
Stay healthy longer.	1	2	3	4	5	6	7
Reduce the risk for illness.	1	2	3	4	5	6	7
Reduce the risk for illness in my family health.	1	2	3	4	5	6	7
Have a good conscience.	1	2	3	4	5	6	7
Control my stress.	1	2	3	4	5	6	7
Relax.	1	2	3	4	5	6	7
Increase my energy.	1	2	3	4	5	6	7

Buying organic foods will help to …

	Strongly Disagree						*Strongly Agree*
Improve the state of the environment.	1	2	3	4	5	6	7
Reduce the use of artificial fertilizers in agriculture.	1	2	3	4	5	6	7
Reduce the pollution of the soil.	1	2	3	4	5	6	7
Reduce the use of herbicides and pesticides in agriculture.	1	2	3	4	5	6	7
Reduce the amount of waste.	1	2	3	4	5	6	7

I believe that organic foods help me to achieve…

	Strongly Disagree						*Strongly Agree*
A comfortable life.	1	2	3	4	5	6	7
An exciting life.	1	2	3	4	5	6	7
A sense of accomplishment.	1	2	3	4	5	6	7
A world at peace.	1	2	3	4	5	6	7
A world of beauty.	1	2	3	4	5	6	7
Family security.	1	2	3	4	5	6	7
Happiness.	1	2	3	4	5	6	7
Inner harmony (respecting the earth)	1	2	3	4	5	6	7
Pleasure.	1	2	3	4	5	6	7
Self-respect.	1	2	3	4	5	6	7
Social recognition.	1	2	3	4	5	6	7
Wisdom.	1	2	3	4	5	6	7
Quality of life.	1	2	3	4	5	6	7
Social justice: care for the weak.	1	2	3	4	5	6	7
Conservation of natural resources.	1	2	3	4	5	6	7
Ordered life.	1	2	3	4	5	6	7

Following question is about **your recommendation and purchase intention** of organic foods.

	Strongly Disagree						*Strongly Agree*
I would mention to others that I buy organic food.	1	2	3	4	5	6	7
I want to make sure that others know the benefits of buying organic food.	1	2	3	4	5	6	7
I would speak positively about organic food.	1	2	3	4	5	6	7
I would recommend eating organic foods to family members.	1	2	3	4	5	6	7
I would recommend eating organic foods to close personal friends.	1	2	3	4	5	6	7
It is very likely that I would purchase organic foods.	1	2	3	4	5	6	7
I am willing to pay a price premium for organic foods.	1	2	3	4	5	6	7
I would only consider purchasing organic foods, if it would be substantially cheaper.	1	2	3	4	5	6	7
I would purchase organic foods, even if it receives bad evaluations by the media or other people.	1	2	3	4	5	6	7

The following statements are for **descriptive purpose** only. Please answer the following questions.

How many times have you purchased organic foods in the past 3 months? _____

How much more are you willing to pay for organic food?

0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50% or more

What is your **gender** type? Male _____ Female _____

Which of the following **ethnic groups** do you belong to?

White(Caucasian) _____ African-American _____ Native-American Indian _____
Hispanic _____ Asian/Pacific Islander _____ Other (Specify) _____

What is your current **marital status**?

Single/Never married _____ Married _____ Widowed _____
Separated/Divorced _____ Living with significant other _____

What is your **age** as of your last birthday? _____

What is the highest level of **education** you have completed?

High-school or less _____ Associate's degree _____ Bachelor's degree _____
Graduate degree _____ Other (Specify) _____

How many **people** are in your **household** (including yourself)? _____

What is your **work status**?

Part-time _____ Full-time _____ Unemployed _____
Retired _____ Homemaker _____ Other (Specify) _____

What is your approximated total **household income** last year (before tax)?

Less than $10,000 _____ $10,000-29,999 _____ $30,000-49,999 _____
$50,000-69,999 _____ $70,000-89,999 _____ $90,000-109,999 _____
$110,000-129,999 _____ $130,000 or more _____

APPENDIX D

A Sample Questionnaire (Main Test)

Dear participant,

Thank you for your participation in this survey. The survey will take about 10 minutes to complete. Your participation in this study is voluntary; you may decline to participate without penalty. If you wish to withdraw from the survey before data collection is completed, your data will be destroyed. All responses will be held in confidence.

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"What is organic food?

Organic food is produced by farmers who emphasize the use of **renewable resources** and the **conservation** of soil and water to **enhance environmental quality** for future generations. Organic meat, poultry, eggs, and dairy products come from animals that are given **no antibiotics or growth hormones**. Organic food is produced **without** using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation.

Have you purchased organic foods in the past month?

- ○ Yes
- ○ No

The following questions are about your involvement with **health**.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
I eat a well-balanced diet.	○	○	○	○	○	○	○
I see my dentist for regular checkups.	○	○	○	○	○	○	○
I exercise regularly.	○	○	○	○	○	○	○
I take precautions against sexually transmitted diseases.	○	○	○	○	○	○	○
I get enough rest and sleep.	○	○	○	○	○	○	○
I maintain a balance between "work" and "play."	○	○	○	○	○	○	○
I pay attention to the amount of alcohol I drink.	○	○	○	○	○	○	○
I try to avoid smoking.	○	○	○	○	○	○	○

The following questions are about your involvement with the **environment**.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
I avoid buying from companies that harm endangered plants or animals.	○	○	○	○	○	○	○
Whenever possible, I walk, ride a bike, car pool, or use public transportation to help reduce air pollution.	○	○	○	○	○	○	○
I avoid using products that pollute the air.	○	○	○	○	○	○	○
I avoid buying products that pollute the water.	○	○	○	○	○	○	○
I make an effort to avoid products or services that cause environmental damage.	○	○	○	○	○	○	○
I avoid buying products that are made from endangered animals.	○	○	○	○	○	○	○
I limit my use of energy such as electricity or natural gas to reduce my impact on the environment.	○	○	○	○	○	○	○

How often do you buy these organic foods? Please check in box for each category of food.

	Never	Almost Never	Sometimes	Fairly Often	Almost Always	Always
Bread & Grains (e.g., rice and oats)	○	○	○	○	○	○
Beverages	○	○	○	○	○	○
Dairy (e.g., yogurt and milk)	○	○	○	○	○	○
Fruits & Vegetables	○	○	○	○	○	○
Frozen meals	○	○	○	○	○	○
Meat, Poultry, & Eggs	○	○	○	○	○	○
Sauces	○	○	○	○	○	○
Snack Foods	○	○	○	○	○	○

When you buy **organic foods, how important** is each of the following attributes?

	Not important 1	2	3	4	5	6	Important 7
Texture	○	○	○	○	○	○	○
Color	○	○	○	○	○	○	○
Smell	○	○	○	○	○	○	○
Taste	○	○	○	○	○	○	○
Value: Quality for price	○	○	○	○	○	○	○
Safety	○	○	○	○	○	○	○
Freshness	○	○	○	○	○	○	○
Healthy diet	○	○	○	○	○	○	○
Nutritional value	○	○	○	○	○	○	○

When you buy **organic foods, how important** is each of the following attributes?

	Not important 1	2	3	4	5	6	Important 7
Brand name	○	○	○	○	○	○	○
Country of production	○	○	○	○	○	○	○
Certified organic label	○	○	○	○	○	○	○
Information about the production method	○	○	○	○	○	○	○
No additives or residues from fertilizers	○	○	○	○	○	○	○
No pesticides or herbicides	○	○	○	○	○	○	○
Fair trade practices	○	○	○	○	○	○	○
Packaged in recycled material	○	○	○	○	○	○	○
Not using genetically modified ingredients	○	○	○	○	○	○	○

Buying organic foods helps me to ...

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Avoid health problems and issues.	○	○	○	○	○	○	○
Stay healthy longer.	○	○	○	○	○	○	○
Reduce the risk for illness.	○	○	○	○	○	○	○
Reduce the risk for illness in my family health.	○	○	○	○	○	○	○
Have a good conscience.	○	○	○	○	○	○	○
Control my stress.	○	○	○	○	○	○	○
Relax.	○	○	○	○	○	○	○
Increase my energy.	○	○	○	○	○	○	○
Improve the state of the environment.	○	○	○	○	○	○	○
Reduce the use of artificial fertilizers in agriculture.	○	○	○	○	○	○	○
Reduce the pollution of the soil.	○	○	○	○	○	○	○
Reduce the use of herbicides and pesticides in agriculture.	○	○	○	○	○	○	○
Reduce the amount of waste.	○	○	○	○	○	○	○

I believe that organic foods help me to achieve…

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
A comfortable life.	○	○	○	○	○	○	○
An exciting life.	○	○	○	○	○	○	○
A sense of accomplishment.	○	○	○	○	○	○	○
A world at peace.	○	○	○	○	○	○	○
A world of beauty.	○	○	○	○	○	○	○
Family security.	○	○	○	○	○	○	○
Happiness.	○	○	○	○	○	○	○
Inner harmony (respecting the earth)	○	○	○	○	○	○	○

I believe that organic foods help me to achieve…

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
Pleasure.	○	○	○	○	○	○	○
Self-respect.	○	○	○	○	○	○	○
Social recognition.	○	○	○	○	○	○	○
Wisdom.	○	○	○	○	○	○	○
Quality of life.	○	○	○	○	○	○	○
Social justice: care for the weak.	○	○	○	○	○	○	○
Conservation of natural resources.	○	○	○	○	○	○	○

The following questions are about **your recommendation** of organic foods.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree7
I would mention to others that I buy organic food.	○	○	○	○	○	○	○
I want to make sure that others know the benefits of buying organic food.	○	○	○	○	○	○	○
I would speak positively about organic food.	○	○	○	○	○	○	○
I would recommend eating organic foods to family members.	○	○	○	○	○	○	○
I would recommend eating organic foods to close personal friends.	○	○	○	○	○	○	○

The following questions are about **your satisfactions and purchase intention** of organic foods.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree7
It is very likely that I would purchase organic foods.	○	○	○	○	○	○	○
I am willing to pay a price premium for organic foods.	○	○	○	○	○	○	○
I would consider purchasing organic foods, even if it is expensive.	○	○	○	○	○	○	○

How many times have you purchased organic foods in the past month?

- ○ 1-5 times
- ○ 6-10 times
- ○ 11-15 times
- ○ 16-20 times
- ○ More than 20 times

How long have you been buying organic food products?

I purchase organic food products at

	Never	Sometimes	Often	Usually	Always
Supermarkets (e.g., Kroger, Food City)	○	○	○	○	○
Natural foods supermarkets (e.g., Whole Foods, Earth Fare)	○	○	○	○	○
Premium specialty grocers (e.g., Fresh Market)	○	○	○	○	○
Hypermarkets (e.g., Walmart, Target)	○	○	○	○	○
Warehouse club (e.g., Sam's club, Costro)	○	○	○	○	○
Local shops (e.g., Farmer's Market)	○	○	○	○	○
Other (Specify)	○	○	○	○	○

How much **more** are you **willing to pay** for organic foods?

0%	Less than 5%	5%-10%	11%-20%	21%-30%	31%-40%	41%-50%	More than 50%
○	○	○	○	○	○	○	○

What is your **gender**?

- ○ Male
- ○ Female

What is your **age** as of your last birthday?

Which of the following **ethnic groups** do you belong to?

- ○ White (Caucasian)
- ○ African-American
- ○ Native-American India
- ○ Hispanic
- ○ Asian/Pacific Islander
- ○ Other (Specify) _____

What is your current **marital status**?

- ○ Single/Never married
- ○ Married
- ○ Widowed
- ○ Separated/Divorced
- ○ Living with significant other

_____

What is your current **marital status**?

- ○ Single/Never married
- ○ Married
- ○ Widowed
- ○ Separated/Divorced
- ○ Living with significant other

How many children under 18 years are living in your household?

0	1	2	3	4	More than 5
○	○	○	○	○	○

What is the highest level of **education** you have completed?

High-school or less	Associate's degree	Bachelor's degree	Graduate degree	Other (Specify)
○	○	○	○	○

What is your **work status**?

Part-time	Full-time	Unemployed	Retired	Homemaker	Other (Specify)
○	○	○	○	○	○

What is your approximated total **household income** last year (before tax)?

Less than $10,000	$10,000-29,999	$30,000-49,999	$50,000-69,999	$70,000-89,999	$90,000-109,999	$110,000-129,999	$130,000-149,999	$150,000 or more
○	○	○	○	○	○	○	○	○

VITA

Yun Hee Kim was born in Seoul, South Korea, on June 26, 1981. She received an M.S. degree in Consumer, Apparel, and Retail Studies from University of North Carolina at Greensboro (2008), and a B.S. in Textile and Apparel Merchandising from Western Kentucky University (2006). While in Graduate School, she worked as a Graduate Teaching Assistant and a Graduate Teaching Associate. She researched organic products in association with consumer values. She has co-authored papers on a new shopper typology, consumers' adoption of technological fashion products, strategic alliance for a technology-fashion product, and use of data analytical techniques in marketing published in professional journals and presented at several conferences. Starting Fall 2014, she will serve as Assistant Professor of Marketing at McKendree University.